# Eau Claire

Renewable Energy Action Plan (DRAFT)

November 2019

# TABLE OF CONTENTS

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# INTRODUCTION

The City of Eau Claire has committed to transition away from a fossil fuel-based economy to mitigate and respond to the threat of climate change. Tackling global climate change at the local level is imperative. It also brings numerous co-benefits to the community including improved air and water quality, resiliency of essential services, and improved economic development.

The purpose of this Renewable Energy Action Plan is to lay out a pathway to meet the City's twin goals of 100% carbon neutrality and renewable energy by 2050. It charts out a holistic course to carbon neutrality across five major sectors: commercial buildings and industry, residential buildings, transportation, waste, and biodiversity. Strategies include direct action on programs, policies, and land use decisions; community-led campaigns to change individual behavior; and engagement with partners such as energy utilities to work across jurisdictions and solve shared challenges.

This plan covers a ten-year timeframe to meet the city's 2030 interim goal of a 30% greenhouse gas reduction below 2015 levels. Longer-term, more transformational strategies will be needed beyond that time period, and will be the focus of future planning work. The strategies outlined in this plan, combined with a decarbonizing electricity grid, set the city on course to meet its 2030 carbon reduction goals.

# COMMUNITY BACKGROUND

## Eau Claire's Commitment to Carbon Neutrality

The consequences of burning significant levels of fossil fuels and land use change over the past 100 years have caused a serious quality of life threat. The warming planet is having profound effects on nature and society. The results are showing in ecosystem change and more extreme weather that affect human life, property and infrastructure. Risk management concerning climate change is a growing concern for federal and state agencies, local governments, power companies, the insurance and finance industries, socially responsible corporations, agribusiness and more.

Eau Claire's annual average temperature has warmed from 43.8°F in 1960 to 46.6°F in 2010, a difference of 2.8 degrees. Climate modeling specific to Wisconsin predicts that by 2050 warming could increase to 50.1°F for a total of 6.3°F over 90 years.[1] Results mean more extreme precipitation events and flooding, shorter winters, greater vector-borne diseases, and drought. These ongoing impacts can place a burden on the local community's social and economic well-being.


**Figure 1. Using only one word, why do you think it's important for Eau Claire to develop a Renewable Energy and Climate Action Plan?**

[1] Climate Wisconsin. Wisconsin Educational Communications Board and University of Wisconsin-Madison https://climatewisconsin.org/story/temperature-change

In June 2017, the Eau Claire City Council directed the City's Sustainability Advisory Committee and staff to analyze what the community and municipal operations needed to do locally to support global and national policy on climate change. The Towards a Renewable City Executive Summary Report[2] recommended several goals consistent with The Paris Agreement[3]. The international treaty seeks to mitigate the impacts of climate change by holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels. The City Council by resolution[4] adopted the report's community and municipality recommendations on March 13, 2018. They are as follows and form the plan's framework.

- Achieve carbon neutrality by 2050
- Use incremental carbon targets to reach 100%.
- Use a 2015 greenhouse gas inventory baseline
- Obtain 100% renewable energy by 2050

Assuming there is general 1% annual economic and population growth in the city that occurs in this period, the resulting reductions are shown below.

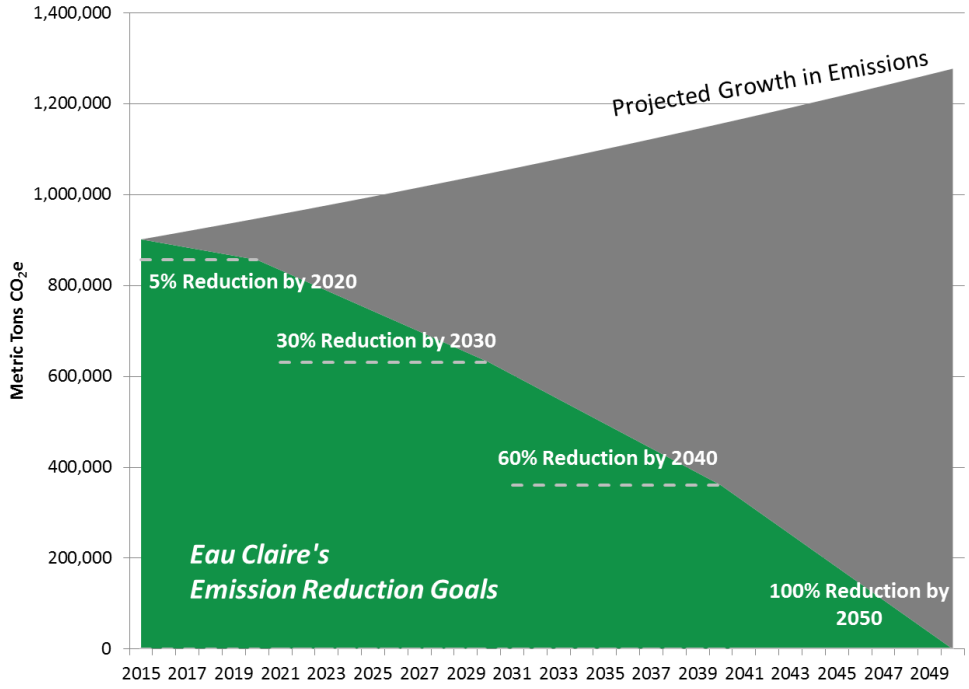



**Figure 2: Eau Claire's Carbon Reduction Goals from a 2015 Baseline**

[2] City of Eau Claire Towards a Renewable City Executive Summary Report. Sustainability Advisory Committee, December 2017 at https://www.eauclairewi.gov/home/showdocument?id=23645

[3] The Paris Agreement at https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

[4] Eau Claire City Council 2050 Goals Resolution at https://www.eauclairewi.gov/home/showdocument?id=23643

# Community Strengths and Partners

The Eau Claire community has numerous local assets that will be crucial for implementing the actions of this plan. The City's role as a regional hub brings innovation and cultural resources. Long-standing institutions and employers, combined with a strong local workforce, create local investment benefits, and continued City leadership on environmental issues will be crucial to move this plan forward.


The REAP steering committee listed the community's assets and strengths as identified in the picture. It will be critical that the community leverages these for the strategies to be effective in meeting goals. Partnerships will be needed and it will take the full community, and individual residents and businesses all doing what they can.

Eau Claire is fortunate that other major community anchors have pledged to carbon and renewable energy goals and this will open the door for greater collaboration and collective action.

- **The University Wisconsin - Eau Claire** pledged carbon neutrality by 2050 in 2009.
- **Xcel Energy** in December of 2018, passed the utility industry's first carbon-neutral electricity 2050 goal.
- **Eau Claire County** and **Eau Claire Area School District** passed resolutions in 2019 to be carbon neutral and 100% renewable energy by 2050.

In October 2019, the City and Xcel further cemented their relationship by entering into an Energy Future Collaboration. The joint agreement provides a memorandum of understanding on share values and principles to advance clean energy and economic development. The EFC will provide a work plan in concert with REAP's implementation work plan.

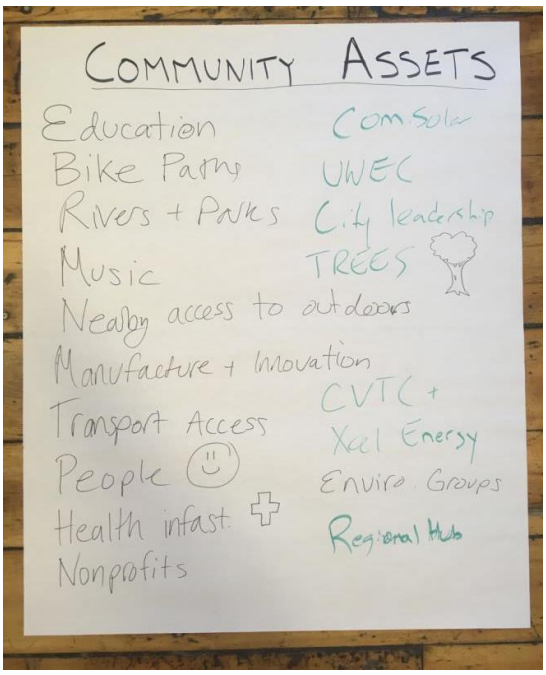



**Figure 3. Community assets identified by REAP committee**

# Previous Work

The City of Eau Claire has been working on concerted sustainability efforts for well over a decade. The following is a non-exhaustive list of various activities the City has been undertaking.

- In 2008, City Council adopted the State's voluntary 25% by 2025 renewable energy goal
- Form an internal interdepartmental staff green team in 2008 and have yearly project work plans
- Hobbs Ice Arena remodeling project in 2008 created the first LEED-certifiable city building
- In 2009 Council adopted The Natural Step systems framework for defining sustainability
- Develop in 2009 a Sustainability Chapter in the Comprehensive Plan (updated 2015)
- Helped form and served on the local Chamber of Commerce's Green Business Initiative
- Developed the first carbon footprint of municipal operations for 2011
- DNR Green Tier Legacy Committee member since 2012 and serve on its Executive Committee
- Procured three hybrid buses in 2013 and add two more in 2019
- In 2014 formed Sustainability Advisory Committee that has yearly work plans
- In 2015 upgraded Waste Water Treatment Plant to capture 50% more biogas digesters for combined power and heat operations. Reduced affluent discharge by 95% into Chippewa River
- First county in WI to enable Property Assessed Clean Energy (PACE) and serve on its state-wide Commission
- Developed first community-wide carbon footprint for 2015 baseline year
- Created an urban wood reuse program in 2017 for local businesses to repurpose street trees
- In 2017 in partnership with Xcel Energy energized largest community solar program in WI on a city-owned landfill
- Citizen-led solar group buy in 2017 and second group buy with MREA in 2019
- Earned top ten status Solsmart Gold designation in 2017 under U.S. Dept. of Energy's program[5]
- City Council passed resolutions in 2018 for carbon neutrality and 100% renewable energy by 2050, and to support congressional legislators to pass a carbon fee and dividend federal system
- In early 2019 joined Global Covenant of Mayors for Climate and Energy and report carbon disclosure report internationally


[5] SolSmart level Gold designation https://www.solsmart.org/communities/eau-claire-wi/

# PLAN DEVELOMENT

## Process

In order to undertake this effort, the City was successful in receiving a planning grant from the State Office of Energy Innovation (OEI) at the Public Service Commission. Funding was provided to the OEI through the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) and covers the REAP plan and its sub-plan components. The Net Zero Energy Building Guide and Electric Vehicle Roadmap are the two supplements to this plan. A municipal facility condition assessment (FCA) covering energy audits and physical structure needs was also included in the grant funding. The FCA report will detail replacement needs and to align with the 2050 goals.

As part of this plan's development, the City chose to utilize Xcel Energy's Partners in Energy professional services. PiE program and staff help communities develop a locally-tailored plans and then assist on implementation activities. Xcel also provided matching dollars for an energy intern to help on the plan and model goals.

The plan was developed with over 40 community stakeholder members forming the REAP steering committee. The roster is noted on the Acknowledgments page and more detailed information on the plan process can be found in Appendix _. The committee provided input, ideas and direction over the course of five workshops, from May to November 2019. Their personal and professional expertise and connections in the community will be invaluable moving ahead.

The plan was included in the City's Sustainability Advisory Committee (SAC) 2019 work plan and thus all its members were on the REAP steering committee. They further reviewed the plan and provided additional direction during their regular meetings.


The City also sought community feedback through temporary public art, located in Haymarket Plaza. Ideas for action could be written on the mural using chalk paint pens.

After community engagement workshops concluded in late November, the plan was reviewed by SAC and the City's Plan Commission for final direction. After the plan was finalized, public hearings were held before approvals. The SAC approved the plan on _____, the Plan Commission on _____, and the City Council on _____. The adopted REAP plan is a component of the City's Comprehensive Plan and has the same authority in decision-making. It strategies will be implemented in various work plans of the City.

# Vision & Guiding Principles

The Steering Committee, through survey responses and workshop feedback, developed the following vision and guiding principles to steer the focus of this planning effort. The vision provides a unifying umbrella for the planning process and its ongoing implementation.

***Eau Claire's Renewable Energy Action Plan will be guided by an evidence-based, transparent, equitable, and inclusive process to meet the goals of 100% renewable energy and carbon neutrality by 2050.***

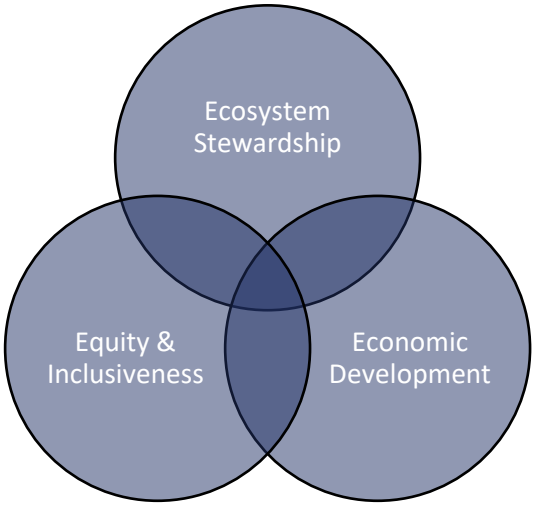
***These ongoing efforts will strengthen our leadership in sustainability and renewable energy development for generations to come.***

In the process of developing the principles, the Steering Committee used the City's adopted The Natural Step four system conditions. These are to reduce dependency on fossil fuels, manufacture of toxic chemicals, encroachment on nature, and to meet the justice, safety, health and social needs of the community.[6] The guiding principles help prioritize the plan activities and emphasize less tangible values and goals beyond carbon savings.

**Equity and Inclusiveness**: *Our work will engage and support the entire community, increasing benefits for under-resourced populations*

**Economic Development**: *We will develop and implement ideas that maximize community investment and local economic opportunity*

**Ecosystem Stewardship**: *We will preserve, protect, and enhance the natural world around us, for our benefit and for generations to come*

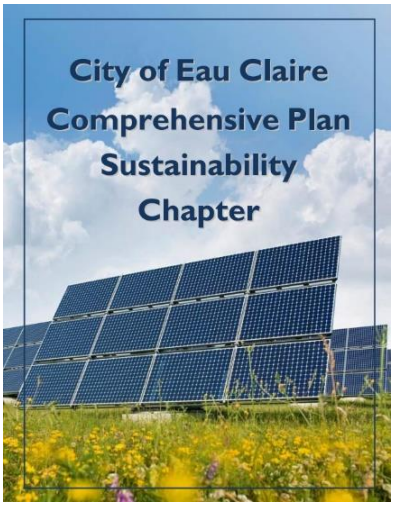


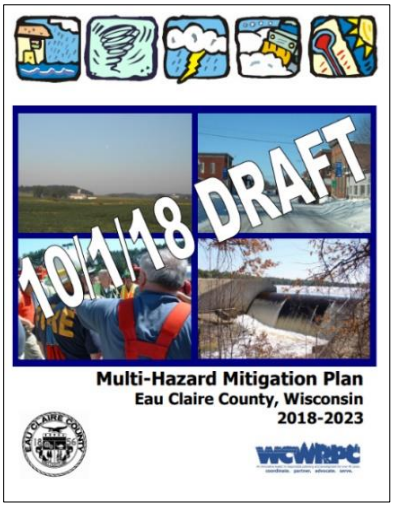

[6] City of Eau Claire's Eco-municipality resolution at https://www.eauclairewi.gov/home/showdocument?id=550

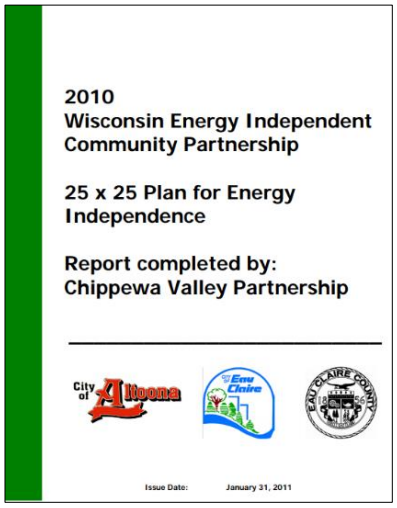
# Integration with Other Community Plans

The Renewable Energy Action Plan (REAP) builds on previous energy, environmental, and resilience activity from other City and community wide plans. As mentioned, the REAP carries the weight and authority as the Comprehensive Plan does for the City. It is a guiding document to meet the 2050 goals. Therefore, it must be integrated and consistent with the aims and plans inside the City's overall master plan. In particular, REAP is connected to, but not limited to the following plans.

- City of Eau Claire Comprehensive Plan, 2015[7]
- Sustainability Chapter
- Land Use and Growth Management Chapter
- Natural Resources Chapter
- Parks, Greenways, and Trails System Chapter
- Transportation System Chapter
- Health Chapter
- The City and County Multi-Hazards Mitigation Plan[8]
- Risk and vulnerabilities assessment
- Context on climate change
- Adaptation and mitigation recommendations
- Emergency actions
- City of Eau Claire's Strategic Plan
- Goals of the City Council that advance environmental and fiscal sustainability
- City of Eau Claire (Chippewa Valley Partnership) Energy Independence Plan, 2010[9]
- Municipality Plan to meet the City's previous 25% renewable energy goal by 2025




[7] City of Eau Claire Comprehensive Plan at https://www.eauclairewi.gov/government/our-divisions/planning/comprehensive-plan

[8] Multi-Hazard Mitigation Plan Eau Claire County, Wisconsin 2018-2023 at http://wcwrpc.org/Documents/ECCo%20Haz%20Mit%20DRAFT%20Full%20JAN%2025%202019.pdf

[9] Chippewa Valley Partnership 25x25 Plan for Energy Independence at https://www.eauclairewi.gov/home/showdocument?id=547

# EAU CLAIRE'S GREENHOUSE GAS EMISSIONS TODAY

Eau Claire's greenhouse gas emissions come from three primary sources: electricity and natural gas use in buildings, fossil fuels burned for transportation, and global warming gases, primarily methane, generated through solid waste and wastewater processing.

The figure below shows how these sources have changed over the previous three years. Residential and commercial buildings account for just over 60% of total emissions, transportation accounts for 36%, and waste processes for 3%.

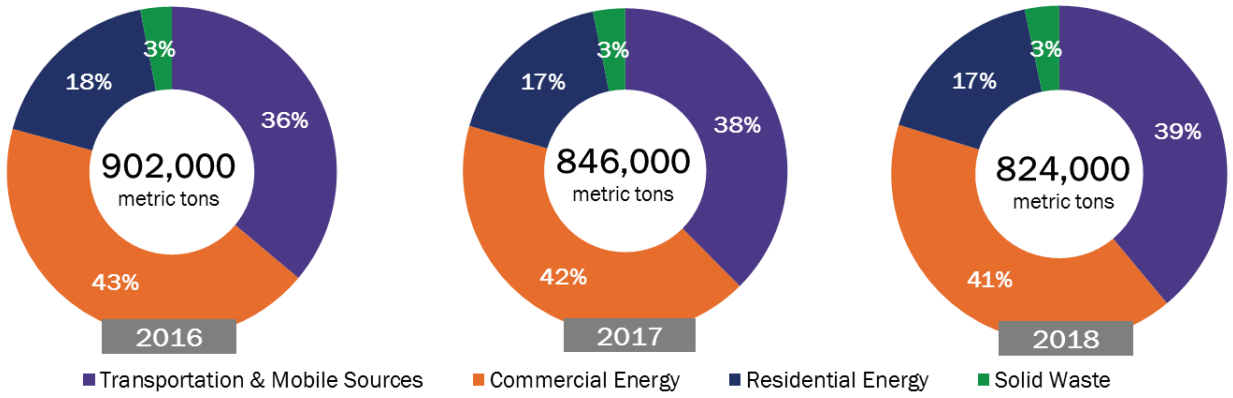



Figure 4. Eau Claire's Community Wide Greenhouse Gas Emissions 2016-2018

Greenhouse gases are lower today than in 2015 primarily because the electricity supply is decarbonizing, a trend that will continue between now and 2050. However, annual energy use also fluctuates year-to-year with changes in weather, which impacts energy demand for heating and cooling.

As shown above, building energy use is the largest single contributor. According to historical energy use data from Xcel Energy, natural gas is 60 percent of all building energy use, while site electricity accounts for 40%. The largest single source of demand is commercial and industrial natural gas, which is driven by Eau Claire's large industrial customers. Municipal energy use is less than 2 percent of all community wide energy.

The greenhouse gas emissions associated with electricity use are poised to decrease over the next 30 years, with Xcel Energy, Eau Claire's largest electricity supplier, has announced a company-wide commitment to carbon neutral electricity by 2050.

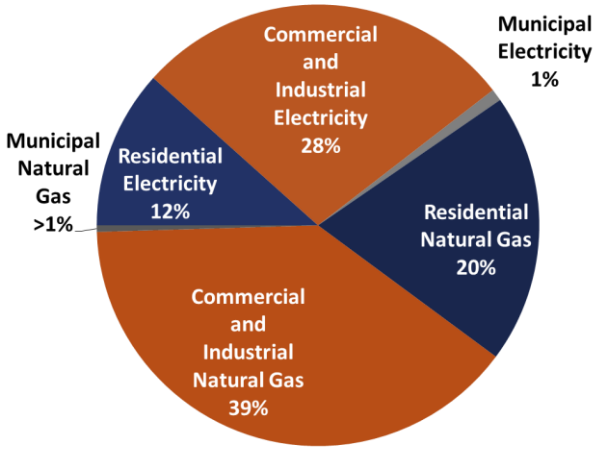



Figure 5. Eau Claire's Electricity & Natural Gas users, 2018

# Sectors of Opportunity

The Strategies outlined in this plan are organized by sector, which align with the community wide emissions inventory. These are:

**Biodiversity:** Strategies that increase the natural carbon sinks in Eau Claire by locally enhancing vegetation and natural landscapes

**Residential Building Energy Use:** The electricity, natural gas, and delivered fuels (e.g. fuel oil) that are used to run residential buildings.

**Commercial, Industrial, and Institutional Energy Use:** The electricity, natural gas, and delivered fuels that are used to run commercial buildings.

**Transportation:** Strategies that reduce the amount of vehicle travel or convert fossil fuel vehicles to lower carbon options

**Waste:** Strategies that reduce the amount of waste generated and sent to landfills, a source of methane emissions

# NEAR TERM STRATEGIES: 2020 - 2030

Near term strategies are defined as strategies that are substantially achievable within a 10-year time horizon, the horizon of this plan. This section outlines the set of strategies identified as near-term priorities by the Steering Committee. Appendix _ contains more detail on specific tactics.

## Biodiversity

Natural resources are fundamental to society. Biodiversity can provide a blueprint on how to operate sustainably. In the natural world, a waste output is a nutrient input. The sun's energy and carbon cycles are examples of interrelated systems. Human-made systems, on the other hand, often disrupt natural ones. This is evident with the vast burning of carbon-based fossil fuels in our transportation and building sectors. As noted in the introduction, this imbalance of carbon dioxide is threating many aspects of life we have come to rely on. Due to these and other negative impacts, there is gaining recognition that inclusion of nature needs to be a prerequisite in decision-making. Thus, this section advances strategies to improve biodiversity outcomes.

Cities are places where biodiversity is often marginalized by development intensification, industrialization, pavement, and vegetation monocultures. Yet, respecting, conserving, supporting and enhancing biodiversity brings life to all living organisms within the city and beyond. The city is a part of a larger environment which supplies critical ecosystem services.

These ecosystems services are broken down into four broad categories which include supporting services, provisioning services, regulating services, and cultural services. Examples of such ecosystem services could be soil formation, energy from biomass or hydropower, carbon sequestration from the urban tree canopy and the mental benefit from living in the natural world.

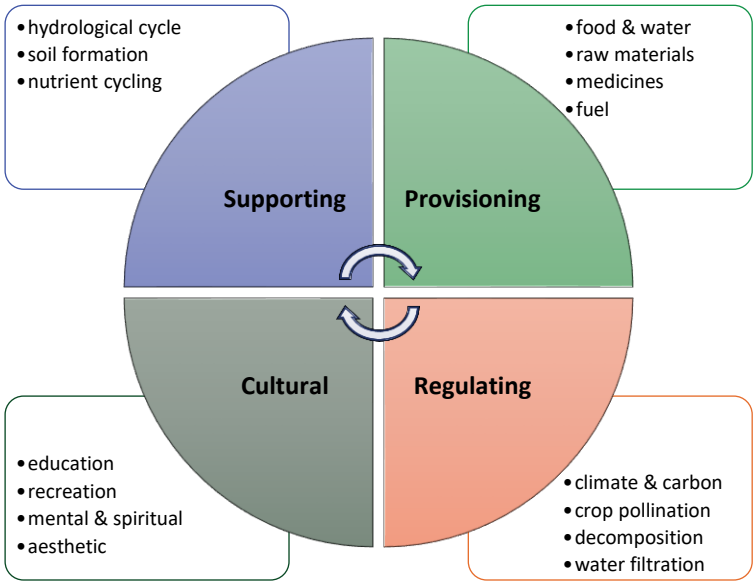



Figure 6. Valuable Services Provided by Nature

## Overarching Strategies

**B1. Continue to implement policies, programs and projects as found in the City's official plans.** The Sustainability and Natural Resources chapters in the Comprehensive Plan, Waterways Plan, Urban Forestry Management Plan, Integrated Pest Management Plan and other plans should be followed to make improvements to the community's biodiversity.

> **Goal:** Implement the City's related biodiversity goals and policies as found in official plans
> **Metric:** Number of policies, programs and projects implemented

**B2. Create a Biodiversity Index.**[10] Compiling the area's natural characteristics and ecosystem services ("blue and green infrastructure") will provide for a deeper respect and understanding of the value of conserving these resources. It will function as a tool to measure environmental performance, evaluate and design future developments, and consider resiliency and adaptation needs in a warming (changing) climate. Utilize community partners to assist in completing the baseline index and to track change.

> **Goal:** Assemble a baseline Biodiversity Index/map to use in decision-making and to track change
> **Metric:** Number of indicators such blue/green acres/corridors, water and air quality levels, native/invasive flora and fauna, school curriculum in parks, support policies, ecological studies, etc.

**B3. Reduce sprawl - loss of biomass carbon sinks (forests, wetlands, cropland, grassland, wetlands).** Continue to work with Eau Claire County and adjacent townships to protect prime agricultural lands, forests and environmentally sensitive features. Encourage denser infill and redevelopment within the city and compact mixed-use new development on edges.

> **Goal**: Reduce needless geographic expansion of metropolitan area by renewing intergovernmental boundary agreements
> **Metric:** Number of agreements, density lot standards, rate of expansion, number of rural conservation cluster subdivisions outside the Urban Sewer Service Area

## Ecosystem Services

| Critical Pathway |
| --- |
| **2030 Target:** Protect and enhance the urban forest by increasing tree carbon sequestration by 10% or 1% per year (636 MTCO2e) over the 2013 baseline. |
| **Baseline Activity in 2018:** The tree canopy within the city limits covers 24% of land (2013) and sequesters 12,725 MTCO2e or 1.4% of total emissions. |

[10] Convention on Biological Diversity at https://www.cbd.int/subnational/partners-and-initiatives/city-biodiversity-index

**B4. Maintain and Increase Urban Forestation.** The co-benefits of trees are numerous.[11] Whether on public or private lands, maintaining and increasing the city's urban forest offers increased ability to sequester carbon dioxide and reduce energy use.

> **Goal:** Increase tree plantings 1% per year
> **Metric:** Number of trees planted and total tree cover (as measured by Google Earth and EyeTree), species ability to sequester carbon and energy use decreased

*Success Story*

The City of Eau Claire has been a TreeCity USA for over 40 years. The City's managed public trees reduce annual energy use from shading and climate effects equal to 3,443 MWh and 458,584 therms, for a total savings of approximately $710,744. They reduce CO2 by a net of 6,239 tons per year, valued at $91,122.

**B5. Retain, restore & enhance natural spaces.** Existing natural spaces within urban environments offer increased levels of biodiversity and ecosystem services. A healthier urban ecosystem can be achieved by increasing native plantings in a variety of public and private spaces.

> **Goal:** Increase 5% more natural spaces
> **Metric:** acres above current baseline of existing natural spaces

**B6. Require more natural spaces for new development.** In order to increase biodiversity in new urban development sites or subdivisions, strategies such as providing natural buffers, rain gardens, alternative lawns, flower beds, gardens, and other native grasses and plantings work to store carbon on the land and provide biodiversity habitat.

> **Goal:** A minimum of 5% more naturalized spaces per lot for residential and 10% for non-residential
> **Metric:** Square footage

**B7. Increase use of trails as biodiversity corridors.** Existing and new trail corridors are excellent places to add no-to-low mow native plant mixes or fescues. Incorporation of taller shrubs and bushes should not compromise safety and regular maintenance.

> **Goal:** Incorporate native grasses/bushes in 75% of feasible trails
> **Metric:** 5% increase per year

**B8. Ease barriers to increase alternative lawns.** Alternative lawns and native lawns can increase biodiversity by storing carbon and enticing biodiversity such as pollinators, but local regulations or

[11] Eau Claire Urban Forest Management Plan, 2010 at https://www.eauclairewi.gov/home/showdocument?id=1360

permitting can discourage the practice. Instead, provide education and technical support on best practices to overcome potential public nuisances.

> **Goal:** City Council to eliminate the application process for alternative lawns and update the Forestry Code
> **Metric:** Five new projects after first year

**B9. Increase on-site infiltration and stormwater capture.** The City follows DNR standards for infiltration and capture of total suspended solids, however there are further opportunities to improve water quality, ground water recharge and flood control.

> **Goal:** Enforce and enhance water quality regulation and practices in priority watersheds for new development and redevelopment sites.
> **Metric:** Percent change from current infiltration and total suspended solids levels

**B10. Increase safe utilization of grey water.** Grey water is gently used water from sinks, showers or laundry. Common practices are for irrigating outside plants or inside greenhouses.

> **Goal:** Support changes to state plumbing codes to allow grey water reuse systems
> **Metric:** Number of homes and business which use and implement grey water systems

**B11. Reduce herbicides, pesticides, fertilizers.** Reduce measured pollution levels in local rivers. Continue to make every effort to follow the City's Integrated Pest Management Plan.

> **Goal**: In three years model nutrient and pollution runoff loading in the city to determine individual reduction level goals
> **Metric**: Loading model and TBD herbicide, pesticide and fertilizer reduction levels

**B12. Support local food, local producers & urban farmers.** Urban agriculture can range from a backyard operation to large scale community gardens.

> **Goal**: Expand community gardens and on-site residential urban agriculture.
> **Metric**: Number of new community gardens and number of applications for bee-keeping, chicken coops, etc.

*Success Story*

Putnam Park offers invaluable biodiversity to the community as a whole. With varied topography, bedrock exposures, seepage springs, and a variety of soil types all in close proximity, Putnam Park possesses many plant and animal habitats. More than 400 species of plants, 100 species of birds in summer, and 23 mammal species have been recorded within the park. Putnam Park is owned by the University of Wisconsin-Eau Claire and was designated a State Natural Area in 1976.

# Residential

Residential homes account for 17 percent of community wide greenhouse gas emissions, and 32 percent of the energy used in Eau Claire's buildings. On average, residents paid $1,376 per year on utility energy costs in 2018.

Eau Claire has a mix of housing types. Single family homes make up 62% of the total housing units, and the median year built is 1970. Forty-six percent of homes are rental units.

The strategies below focus on increasing energy efficiency and renewable energy purchases by local residents. Eau Claire has a strong baseline of energy efficiency and renewable energy activity, largely through participation in Focus on Energy programs that are available statewide.

## Overarching Strategies

**R1. Promote the use of the City's Net Zero Energy Building Guide.** Deploy trainings and communications to increase awareness and implementation of net zero strategies as found in the guide.

> **Goal:** 30 net zero energy residential projects by 2030
> **Metric**: Number of projects

**R2. Support a residential net zero energy development.** Work with stakeholders to develop a residential housing arrangement or subdivision that is energy self-sufficient (i.e., designed using energy efficiency, passive energy, solar and storage, smart appliances/meter/grid technologies, etc.)

> **Goal:** At least one project by 2030
> **Metric**: Number of projects and houses

**R3. Increase prevalence of energy efficient, low emissions affordable housing.** Work with partners and developers to increase awareness of and access to resources for low carbon footprint development.

> **Goal:** 100% of affordable housing development in Eau Claire takes advantage of an energy efficiency or renewable energy program
> **Metric:** Number of developments participating in programs

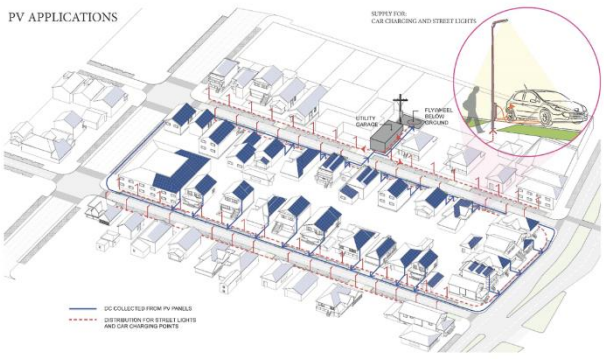



Figure 6. Low-emission, smart grid, EcoBlock pilot in Oakland, CA at https://rael.berkeley.edu/project/the-eco-block-project/

## Energy Efficiency

| Critical Pathway |
| --- |
| **2030 Targets:** 2% electricity savings and 1% natural gas savings annually |
| **Baseline Activity in 2018:** 1.5% electricity savings and 0.9% natural gas savings annually |

**R4. Increase awareness of energy efficiency among Eau Claire residents.** Use communications channels and community ambassadors to promote energy savings to local residents.

**Goal:** Conduct two awareness campaigns per year
**Metric:** Number of promotions per year

**R5. Promote Energy Audits, Energy Efficiency Rebates and Financial Incentives**. Work with Focus on Energy, existing service providers, state, and additional utility programs to sign up residents for energy efficiency programs and services.

**Goal:** 4,000 participants per year, including 750 home audits
**Metric:** Participation in Programs

**R6. Pass a Home Energy Rating Ordinance.** Work with local stakeholders to develop a City policy to provide energy performance transparency for residential homes. This would provide each home within with a transparent and apples-to-apples metric for energy use, analogous to miles per gallon ratings for vehicles.

**Goal:** Pass a home energy rating ordinance within 3 years
**Metric:** Ordinance passed

## Renewable Energy

| Critical Pathway |
| --- |
| **2030 Target:** Convert 200 residential households per year to all renewable electricity, and 20 households per year to renewable thermal (including geothermal HVAC and solar thermal) |
| **Baseline Activity in 2018:** These is approximately 2 MW of installed solar within Eau Claire. There were 1,216 total renewable subscribers in 2017 (from Windsource® and community solar gardens) and 12 new renewable signups in 2018 through Focus on Energy. |

**R7: Increase number of residential subscribers to utility renewable subscription programs**. Promote existing programs that allow residents to sign up for 100% renewable energy through their utility (e.g. Renewable*Connect or Evergreen)

**Goal:** 100 new subscribers per year

**Metric:** Number of subscribers

**R8. Increase adoption of renewable-powered heating, cooling, and hot water technologies**. Remove market barriers using education, trainings, and promotion of existing incentives. Technologies include geothermal energy, air source heat pumps, or other electricity technologies fueled by renewable energy.

**Goal:** By 2030, convert 20 households per year to renewable thermal
**Metric:** number of homes

**R9. Develop new community-sited solar within Eau Claire and offer subscriptions to residents.** Build on success of existing community solar garden, with a focus on promoting subscriptions to local households.

**Goal:** Install and subscribe 2 MW by 2030
**Metric:** Number of MW subscribed

**R10. Increase the number of solar-ready buildings in residential new construction.** Incentivize or require residential homes that are built to install rooftop solar to avoid future retrofit, through tactics such as solar guide checklists, offering incentives, and exploring state-level code changes.

**Goal:** Develop incentive offering within 4 years and build 25 solar ready homes per year
**Metric:** Number of solar ready homes built per year

**R11. Support a solar group-buy program in the Eau Claire area.** Facilitate a group buy program, using lessons from previous community experience. Group buy programs coordinate education and installation schedule across a group of residents, generally for a discounted price on the technology.

**Goal:** Launch solar group buy program within 3 years
**Metric:** Launch of program

# Commercial, Industrial, and Institutional

This sector includes all non-residential buildings in Eau Claire, such as small and large business, institutional buildings such as colleges and schools, and the industrial sector. Overall these sectors accounted for 68% of Eau Claire's building energy use in 2018, and 41% of economy-wide carbon emissions.

Commercial buildings have a strong track record of saving energy. The baseline energy efficiency program activity has been 2.3% savings for electricity and 1% savings of natural gas use per year.

## Overarching Strategies

**C1. Promote the use of the City's Net Zero Energy Building Guide.** Deploy trainings and communications to increase awareness and implementation of net zero strategies as found in the guide.

**Goal:** 10 net zero energy commercial projects by 2030
**Metric:** Number of projects

**C2. Support a business recognition program to recognize and promote businesses that have taken action in sustainability, especially relating to energy and carbon reductions**. Use city and community communications platforms to support and recognize leaders.

> **Goal:** Increase participation in business recognition programs
> **Metric:** Number of city sustainability awards following the REAP framework

**C3. Offer and promote resources to reduce the costs of energy efficiency and renewable energy projects, including financing.** Promote existing financial and financial resources, such as from Focus on Energy, Xcel Energy, or Eau Claire Energy Cooperative, and explore options for the City to help support.

> **Goal:** 25 businesses receive low-cost financing through the City or other sources by 2025
> **Metric:** loans provided

## Energy Efficiency

| Critical Pathway |
| --- |
| **2030 Target:** Achieve 3% energy savings per year in electricity and 1% savings per year in natural gas |
| **Baseline Activity in 2018:** Annual savings of 2.3% for electricity, and 1% for natural gas. |

**C4. Improve energy efficiency in existing buildings and infrastructure.** Coordinate among existing program, financial, and technical resources to increase uptake of energy efficiency.

> **Goal:** 150 utility energy efficiency projects completed annually in year 1, and increasing to 300 projects annually by 2025
> **Metric:** Permit plans that demonstrate high energy efficiency standards

**C5. Improve energy efficiency in new construction and major renovations.** Use city communication channels and explore policy options to encourage energy efficiency in new construction and major renovations.

> **Goal:** Increase community awareness of green certification programs for new construction and renovations. Stretch Goal: All City new construction and renovation projects are built to a green building standard
> **Metric**: Number of projects built to green standard

**C6. Increase the number of businesses that track energy use through energy benchmarking.** Promote tools to help businesses track energy use and explore policy options to incentivize energy benchmarking.

> **Goal:** All municipal buildings and 50 commercial buildings benchmark annual energy use. Twenty-five commercial buildings publicly share results
> **Metric:** Number of buildings benchmarking and sharing results

## Renewable Energy

| Critical Pathway |
| --- |
| **Proposed 2030 Targets:** 15 new renewable electric customers per year to reach a total of 5 MW by 2030; 5 new renewable thermal customers per year. |
| **Baseline Activity in 2018:** There is approximately 2 MW of installed solar within Eau Claire and 36 solar installations (residential and commercial) across the city.[12] There were 16 total renewable subscribers in Eau Claire County in 2017 (Windsource® + community solar gardens), and 2 new renewable signups in 2018 through Focus on Energy. |

**C7. Increase the number of on-site customer-owned solar photovoltaic installations at existing buildings and sites.** Educate and consider policies to encourage businesses to install rooftop, parking lot, or other on-site solar.

**Goal:** 5 New installations each year
**Metric:** solar installations at commercial, industrial, or institutional sites

**C8. Increase the number of solar-ready buildings in commercial, industrial, and institutional new construction.** Use communication channels such as the solar guide checklist and explore policy options to encourage solar-ready design in new construction and major renovations.

**Goal:** 10% of new construction and major renovation projects are solar-ready by 2025
**Metric:** projects that are solar ready

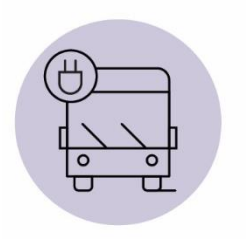
**C9. Increase the number of commercial subscribers to utility renewable subscription programs (e.g. Renewable*Connect or Evergreen).** Encourage commercial customers to sign up for renewable energy subscriptions by marketing the ease of sign-ups, and consider options to reduce the cost to consumers.

**Goal:** 10 new customers per year
**Metric:** Number of new customers

**C10. Increase adoption of renewable-powered heating, cooling, and hot water technologies, including geothermal projects.** Consider incentives to reduce the costs of renewable-powered heating, and explore potential project sites in Eau Claire.

**Goal:** 5 new projects per year
**Metric:** Number of projects

[12] Google Project Sunroof



# Transportation

In 2017, the EPA found nationally that the transportation sector accounted for 29% of all greenhouse gas emissions. In Eau Claire, that percent in the 2015 baseline year was 34%. Switching to non-fossil fuels, specifically vehicles running on cleaner electricity, is one important pathway to reduce carbon dioxide ($CO_2$), particulate matter (PM10) and smog ($O_3$). Co-benefits of these actions will improve air quality and health risks to respiratory illnesses and premature deaths. The REAP Steering Committee chose to focus on vehicle electrification strategies instead of plant-derived biofuels, mainly corn-based ethanol and bio-diesel. Although classified as renewable energy and emissions are fossil-free carbon, actual consumption is blended with gasoline or diesel and that makes it difficult to account for at the local level. There are greater challenges with ethanol's input-to-output energy ratio being less than and that it is an important global food supply. On the other hand, research into non-food based advanced cellulosic bio-fuels (grasses, wood or algae) may hold greater long-term promise if successfully commercialized.

A second key pathway to reducing transportation emissions is designing a city so that it is easier to walk, bike and take transit. Eau Claire's downtown is an example of where it might be feasible to live and work in close proximity. The City's 2015 Comprehensive Plan's Sustainable Growth[13] policies advance the goal of intensifying the pattern of land use in areas of the city to increase the use of walking, bicycling and transit. Major "Activity Centers" like the mall area and the medical/educational campuses along West Clairemont Avenue are opportunities to create higher density development, particularly with employment, shopping and multiple-family housing served by transit, sidewalks and bicycle routes. This section starts with land use strategies because a city's transportation vehicle miles traveled (VMTs) emissions are highly contingent on where housing, jobs and services are located.

| Critical Pathway |
| --- |
| **2030 Targets:** Electric vehicles increase to 10% of vehicle miles traveled (VMT) traveled and an increase in vehicle occupancy from the Midwest average of 1.63 persons per vehicle to 2. |
| **Baseline Activity in 2018:** Total community vehicle miles travel (VMT) totaled 728,824,567 with about 92% of those miles coming from gasoline fueled vehicles. |

## Land Use

**T1. Densify the city.** A denser city is energy more efficiency and allows for easier use of alternative modes of transportation like walking, biking and transit. Some benefits include reduced vehicles miles traveled and air pollution. Determine average density baseline data in each census track of city to establish density goals, development opportunities and policies to increase dwelling units and jobs.

**Goal:** Increase the average density of the city, especially in areas most suitable.

[13] Eau Claire Comprehensive Plan 2015 Land Use & Growth Management Plan at https://www.eauclairewi.gov/home/showdocument?id=10517

**Metric:** Percent change of population, dwelling units, households, VMT, jobs

**T2. Incentivize and Require more compact and mixed-use development.** A city's built form plays a large role in determining travel outcomes. One that is more compact and that provides jobs and services close to housing, will foster more travel options. The City's Traditional Neighborhood Development is a template to use for this type of development and provide density and affordable housing incentives.

**Goal:** At least five new developments achieving compact and mixed use development utilizing Traditional Neighborhood Development (TND) ordinance or the Mixed-use Development Overlay District (MX).[14]
**Metric:** Number of households per acre and number of uses per development

**T3. Reduce required parking.** Consider allowing developers to reduce minimum required parking by providing justification analysis. Examples could range from affordable and special needs housing to property managers contracting with transit, rideshare, and delivery services. Transportation Demand Management strategies could be utilized as well.

**Goal:** Reduce number of parking spots and single occupancy vehicles (SOV) required per the zoning code
**Metric:** Number of parking spots per development, SOV VMT reductions

## Alternative Modes of Transportation

**T4. Increase the City's Bike and Pedestrian friendly environments.** The City's Bicycle and Pedestrian Plan advances many strategies and provides detailed map improvements to the City's infrastructure. One example is called complete streets, where consideration is given to designing roads with various mobility users groups.

**Goal:** Implement complete streets policy recommendation by 2020
**Metric:** Miles of bike and walking trails and number of citizens who bike and walk to work using Census data. Number of Complete Street miles.

**T5. Increase neighborhood walkability.** Walk Score® is a tool to analyze how walkable it is to services from housing.[15] With a 2019 score of 34 Eau Claire is considered a car-dependent city.

**Goal:** Increase City "walk-score" by 10 points
**Metric:** City "walk score"

**T6. Launch Bike and/or Scooter-share programs.** Private companies may find opportunities and or partnerships in the city to make these programs more feasible.

**Goal:** At least 1 scooter-share company or bike-share company operating by 2022.
**Metric:** Number of bikes and scooters deployed and yearly miles travel via these services

**T7. Improve Transit Ridership and Access.** The City's 2020 Transit Development Plan (TDP) will examine system and service improvements to increase ridership and improve access to the public.

[14] City of Eau Claire TND – TRADITIONAL NEIGHBORHOOD DEVELOPMENT Chapter 18.14 at https://www.eauclairewi.gov/home/showdocument?id=25275
[15] https://www.walkscore.com/

**Goal:** Increase ridership by 10% by 2021 (approximately 100,000 rides)
**Metric:** Ridership levels and VMT

**T8. Explore on-demand micro-transit.** Micro-transit[16] is an on-demand public service that does not follow fixed-routes coverage, thus being more flexible in trip origins and destinations. The City will study the concept in its Transit Development Plan (TDP) as a possible service improvement.

**Goal:** By 2021 determine if feasible for public micro-transit
**Metric:** Percent of city residents supported by improved service coverage and frequency

**T9. Explore a zero-fare transit system.** Examine the viability of this option to increase ridership, especially along highest-frequency routes, connected activity centers such as the mall with downtown, or on routes with most vehicle congestion.

**Goal:** Implement one zero-fare route
**Metric:** Number of riders

## Alternative Fuel Vehicles

**T10. Implement the EV Roadmap.** This REAP sub plan will detail focus area and strategies that advance electrification of vehicles in the community and for the municipality.

**Goal:** Reach the plan's goal of 10% of EVs by 2030; 15% for the municipality
**Metric:** Displaced gasoline and diesel VMTs using DMV registrations of battery electrics (BEVs) and plug-in hybrid electrics (PHEVs).

**T11. Conduct broad community outreach on electric and alternative fuel vehicles.**

**Goal:** Hold public events to increase education on EV for citizens and fleets
**Metric:** Number of events per year

**T12. Increase local purchases of electric vehicles.** Dealers work to increase more EVs on lots and partner with local utility companies, higher educational institutions, units of local government, businesses, etc. to improve sales.

**Goal:** EVs reach 10% of sales in city by 2030
**Metric:** Number of EVs and PHEVs purchased

**T13. Foster EV Car/Ridesharing/Taxi Programs.** Example of this can vary. In Madison a cab company is switching their fleet over to Telsas. [17] In the Twin Cities a non-profit car-sharing service called HourCar is transitioning their fleet to EVs by 2020 in partnership with Xcel Energy.[18]

**Goal**: Establish a car sharing program by 2025
**Metric**: Participation in the program

[16] America Public Transportation Association's definition of micro-transit at https://www.apta.com/research-technical-resources/mobility-innovation-hub/microtransit/

[17] https://greencabmadison.com/drive/

[18] Energy News Network at https://energynews.us/2019/04/22/midwest/xcel-program-will-work-to-electrify-car-sharing-and-government-fleets/

**T14. Expand Electric Light Duty Vehicle Charging Infrastructure.** Ample public and private charging locations is critical for marketplace confidence.

> **Goal:** Install at least 3 DC fast chargers, 500 Residential Level 2s, and 25 chargers for light-duty fleets
> **Metric:** Number and type of chargers installed

**T15. Work with utility providers to promote charging infrastructure and competitive rates.** Rates that incentivize fuel switching can make EVs more economical.

> **Goal:** Support utilities through marketing, education and incentivizing the marketplace
> **Metric:** Number of programs

**T16. Require and prioritize parking for electric vehicles.** Such regulation can increase public awareness on EVs and save electrical line extension costs.

> **Goal:** Pass an ordinance requiring EV chargers depending on land use, number of stalls required, and locational preference.
> **Metric:** Number of EV stalls and type of chargers installed

# Waste

Although waste is a relatively small portion of the emissions for the community, there is potential to reduce methane emissions by avoiding the landfilling of organic waste. The City of Eau Claire has already made efforts to reduce the methane emissions concerning the wastewater treatment plant which has been extremely successful. The 2015 baseline greenhouse gas inventory shows CO2e emissions from solid waste make up about 3% of the total CO2e emissions for the community or roughly 26,471 MT CO2e. It should be noted that the waste category for the community GHG inventory only took into account in-boundary emissions from Seven-mile landfill. The municipal GHG inventory measured the emissions from the wastewater treatment plant which has made significant reduction in GHG emissions by utilizing captured biogas.

| Critical Pathway |
| --- |
| **Proposed 2030 Targets:** Divert 50% of organic waste and 50% of construction & demolition streams |
| **Baseline Activity in 2018:** Baseline from 2009 DNR state waste characterization study: Organics (23%) & Construction & Demolition (21%) |

**W1. Utilize 100% of wastewater treatment plant biogas.** The City's wastewater treatment plant can utilize 20% more of the methane currently generated from its anaerobic digestion process.

> **Goal:** Install/update required equipment to capture and generate heat and power from 100% of biogas
> **Metric:** Gas captured for heat (therms) and electricity (kWh)

**W2. Continue land application of bio-solids.** This product from the City's wastewater treatment plant is a natural fertilizer and saves on landfill costs. During the last 5 years, over 37 million gallons of bio-solids have been land applied on farm fields.

> **Goal:** Continue to seek ways to increase the amount of bio-solids land applied.
> **Metric:** millions of gallons

**W3. Establish a zero-refrigeration leak goal.** Refrigerants such as Hydrofluorocarbons (HFCs) have very high global warming potential sometimes thousands of times higher compared to CO2. Partnerships through existing programs such as EPA's GreenChill[19] certification which industry, retailers and others can participate in.

> **Goal:** Establish goal within 3 years and increase participants in program like GreenChill
> **Metric**: Reports that identify the volume of leaks and number of GreenChill companies

[19] EPA GreenChill Partership at https://www.epa.gov/greenchill

**W4. Transition haulers to capture compostables.** Work with stakeholders to explore mechanisms to capture compostables at higher rates. Options could include greater curbside pickups or community composting transfer sites.

> **Goal:** 50% of organics diverted
> **Metric:** Weight of the compost

**W5. Increase recycling of construction and demolition (C&D) materials.** Diverting C&D materials from landfills is an important part of sustainable waste management. Supporting innovation and partnerships to increase C&D material recycling may offer new markets and local economic development.

> **Goal:** Increase non-residential C&D recycling to 75% per job site by 2030.
> **Metric:** Reported volumes of recycled materials to the County

**W6. Explore organized municipal waste collection.** Organized municipal waste collection often times increases recycling rates, keeps cost down for residents, reduces fuel usage and reduces the impacts on roadways.[20]

> **Goal**: Examine if an organized municipal waste collection program is feasible in 3 years.
> **Metric:** Cost benefits to public and increase diversion of compostable and recycled materials

**W7. Explore building a Materials Recovery Facility (MRF).** Exploring current and developing new remanufacturing markets to support a regional MRF will be important to make the process economical. Building partnerships with existing local businesses to use recycled material may aid in the development of a more sustainable and circular business model while reducing landfilled materials and greenhouse gasses.

> **Goal**: Create a business plan to assess feasibility and secure end markets for recycled materials
> **Metric:** Number of business partnerships and end markets created

# Cross-Cutting Strategies

In addition to the strategies above, the following foundational actions emerged that have implications across all sectors. When achieved, these will support all or most areas of this plan.

**CC1. Continue to utilize partnerships and tools to track required data.** Quality and timely data is critical to understand progress and to evaluate the effectiveness of the strategies.

**CC2. Hire a full time city staff to work on achieving the goals and targets of this Renewable Energy Action Plan.** Dedicate full time City staff to support the strategies and goals of this plan.

**CC3. Work with local institutions to train the next generation of the environmental workforce.** Partner with local institutions to offer and support curriculum dedicated to training the next generation of environmental workers.

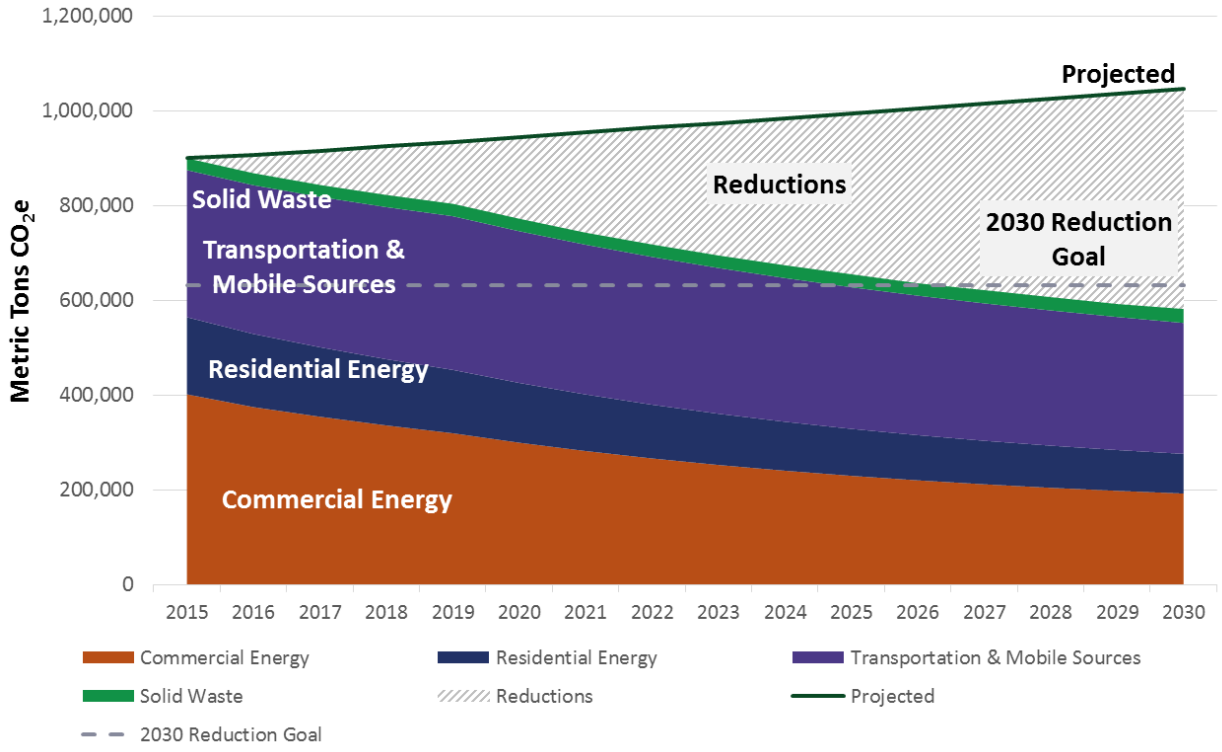
[20] https://www.pca.state.mn.us/sites/default/files/leg-12sy1-06.pdf

# PROJECTED IMPACT AND TIMELINE

## Decarbonization

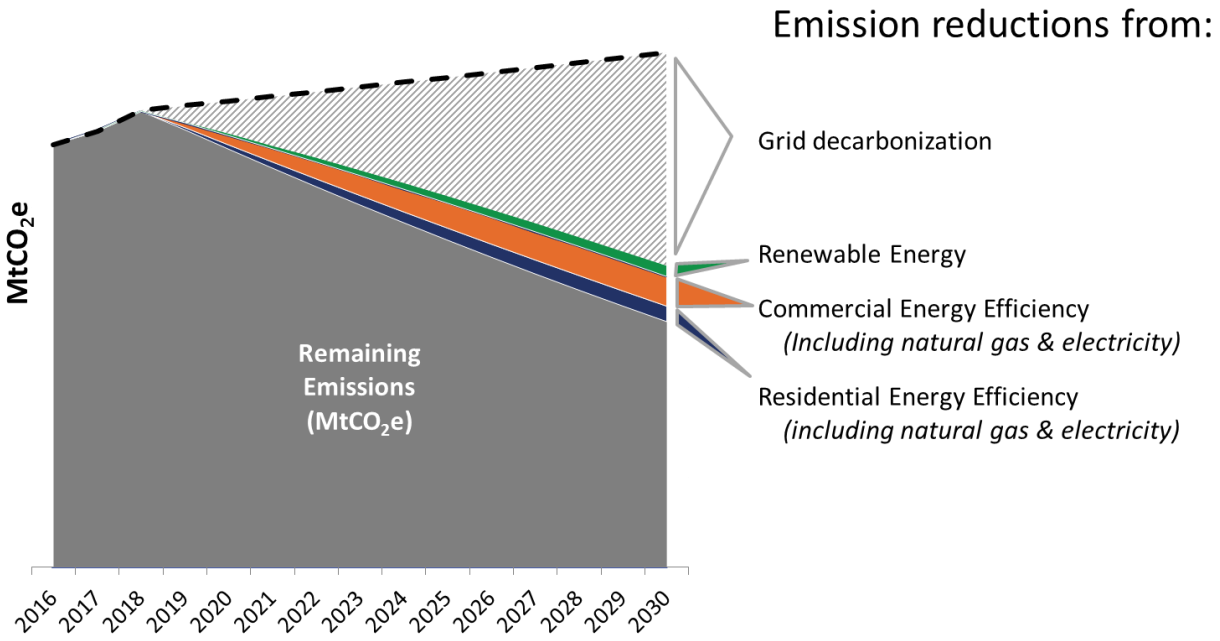
All together, these near-term goals and strategies put the city of Eau Claire on track to meet or exceed its 2030 carbon reduction goals. The largest reduction in total carbon emissions comes from the commercial sector. As a percentage, both commercial and residential sectors are projected to reduce emissions by 50%, driven in part by electricity decarbonization. The transportation sector is projected to reduce total emissions by 11%.

Figure 3: City-wide Greenhouse Gas Emissions Projections by Sector, 2015-2030

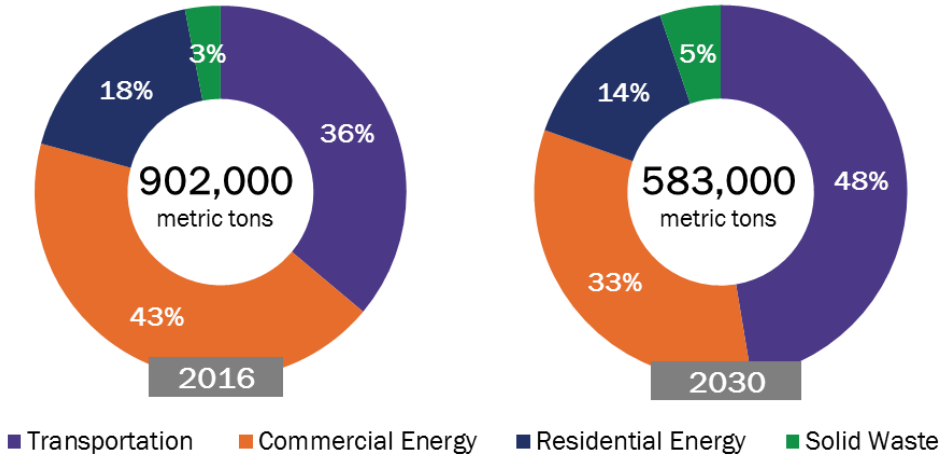



The impact from electricity grid decarbonization are shown more clearly for the emissions of the buildings sector alone. The chart below shows that decarbonization will contribute 40% of the reductions between 2016 and 2030. Beyond 2030, electrification of end uses currently relying on fossil fuels (such as building heating and transportation) will need to be an increasing share of the decarbonization strategies.

Figure 4: Reductions in Building Energy Use by Reduction Source: 2016-2030




One result of the rapid decarbonization of Xcel Energy's electricity supply is that other sectors will grow in their overall share of carbon emissions. Despite overall emissions reductions, the transportation sector will grow from 34% of today's contribution to 48% of the contribution in 2030. Solid waste will grow from 3% to 5%.

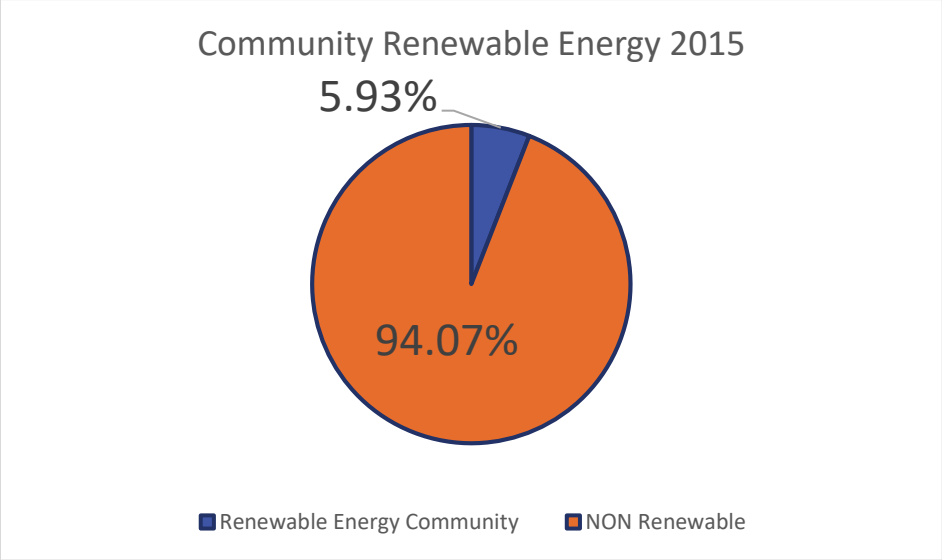


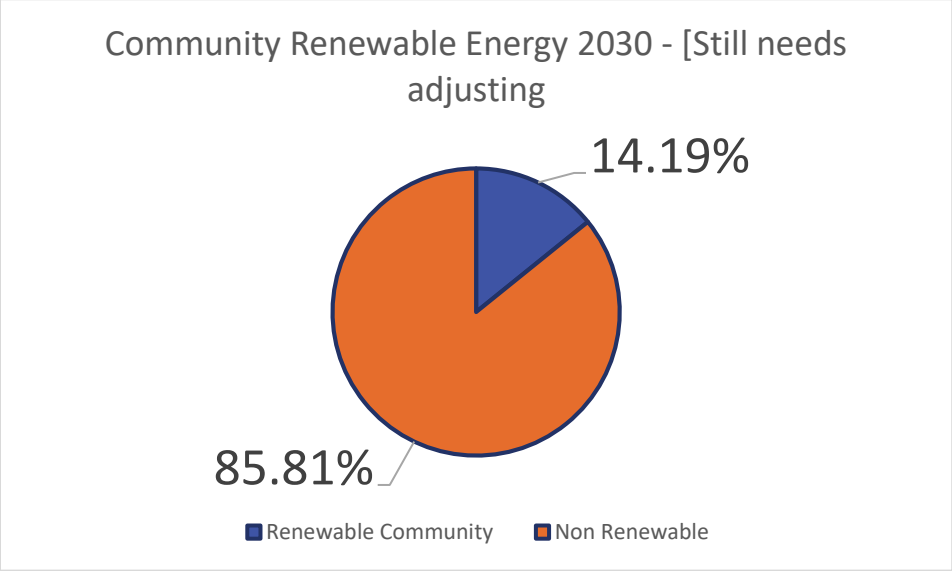

# Renewable Energy

There are no interim renewable energy goals to obtain 100% by 2050. In 2015 the community had a baseline of about 6% of total BTU (British Thermal Unit) energy consumption counted for as renewable energy. This includes __ % from Xcel and __ from their voluntary Windsource and community solar

programs. The municipality had_____. Distribution generation has not been accounted for in either and data improvements are needed to track this local resource.

By 2030 Xcel Energy projects to be supplying 60% renewable electricity to the community. If 10% of vehicles are running on this level of renewables, the community reaches 14%. This number should be somewhat higher if data is kept on all the distributed renewables installed. However, between 2030 and 2050, major gains will be required in order to meet the 100% renewable energy goal. Long term strategies in Appendix _ will put forth some key transformations to consider.



# PLAN IMPLEMENTATION

## Major Work Plan Items in Years 1 & 2

The REAP Steering Committee, Sustainability Advisory Committee, project planning team, and City staff identified the following major milestones to jump start the plan in the first two years of implementation. General feasibility, human and fiscal resource capacity were also considered. The action strategies have been ranked and prioritized using the below standards. This organized arrangement provides structure, expectations, and flexibility when developing individual work plans or tasks for the City.

- **"High"** - underway within 1 to 2 years
- **"Medium"** - underway within 5 years
- **"Low"** - underway within 10 years

It is also important to note that many of these strategies will require working closely with community partners. As mentioned, Eau Claire County, Eau Claire Area School District, University of Wisconsin – Eau Claire, and Xcel Energy all have major carbon-neutral goals. It will be vital to work with the Eau Claire Energy Cooperative, Focus on Energy, Western Dairyland, Chippewa Valley Technical College, Eau Claire Area Chamber of Commerce, hospitals, and developers during the course of action. The private sector- residents and businesses- can also use this work plan to provide direction on their own commitments to sustainability.

### Biodiversity

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **B1. Continue to implement policies, programs and projects as found in the City's official plans.** | • Follow existing City plans<br>• Implement policies, projects, and programs<br>• Update plans when needed | High |
| **B2. Create a Biodiversity Index** | • Form partnerships<br>• Determine index parameters<br>• Create and approve index<br>• Use index to inform plans and projects | Medium |
| **B3. Reduce sprawl - loss of biomass carbon sinks** | • Work with townships and county<br>• Renew intergovernmental boundary agreements<br>• Compact development increases in city | High |
| **B4. Maintain and Increase Urban Forestation** | • Restrict major loss of tree canopy<br>• Track environmental and socio-economical changes to resource<br>• Plant trees greater than net annual total | High |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **B5. Retain, restore & enhance natural spaces** | • Educate on best practices and benefits of natural spaces<br>• Inventory existing spaces devoid of biodiversity<br>• Plant native plantings in public locations | Medium |
| **B6. Require more natural spaces for new development** | • Require in new planned developments<br>• Amend related zoning ordinances<br>• Observable changes to urban landscape | Medium |
| **B7. Increase use of trails as biodiversity corridors** | • Analyze trails for improvements<br>• Determine funding and operational needs<br>• Increase plantings per recommendations | Medium |
| **B8. Ease barriers to increase alternative lawns** | • Amend the ordinance to element the required permit<br>• Provide education and best practice tips | High |
| **B9. Increase on-site infiltration and stormwater capture** | • Enforce current water quality DNR standards<br>• Study measures above basic code<br>• Analyze improvements to priority watersheds<br>• Enact recommendations | Medium |
| **B10. Increase safe utilization of grey water** | • Support State policy change | Low |
| **B11. Reduce herbicides, pesticides, fertilizers.** | • Continue to enforce existing State/City policies and plans<br>• Model stormwater runoff in the community<br>• Determine pollutants and percent reductions | Medium |
| **B12. Support local food, local producers & urban farmers** | • Work with user groups to increase community gardens<br>• Approve operating agreements, if in public spaces<br>• Keep urban ag permits low or cost-neutral | Medium |

## Residential Sector

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **R1. Promote the use of the City's Net Zero Energy Building Guide.** | • Provide training to area builders with local builder's association<br>• Develop incentives or RFP contest<br>• Work with CVTC's residential construction program to design a prototype house<br>• Complete 30 net zero energy projects by 2030 | High |
| **R2. Support a residential net zero energy development.** | • Meet with interested parties<br>• Explore using Gateway Business Park land<br>• At least one project by 2030 | Medium |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **R3. Increase prevalence of energy efficient, low emissions affordable housing development.** | • Meet with affordable housing developers to share resources and understand barriers to energy efficiency or renewable energy<br>• Assess ability to promote energy efficiency and renewables via other programs geared at income qualified housing | Medium |
| **R4. Increase awareness of energy efficiency among Eau Claire residents** | • Send city communications with energy savings tips<br>• Host at least one resident workshop<br>• Identify funding options for net-zero demonstration home<br>• Launch eco-teams program | High |
| **R5. Promote energy audits, energy efficiency rebates and financial incentives** | • Increase weatherization participation based on low income heat participation<br>• Engage with local landlords to improve energy efficiency in rentals | High |
| **R6. Pass a Home Energy Rating Ordinance** | • Host listening sessions with stakeholders<br>• Provide draft recommendations on ordinance<br>• Develop workplan to pass ordinance in Year 3 | Medium |
| **R7. Increase number of residential subscribers to renewable subscription programs** | • Identify and engage key local partners for promotional campaign<br>• Launch city-wide challenge in Year 2 | High |
| **R8. Increase adoption of renewable-powered heating, cooling, and hot water technologies** | • Publish technical information guide<br>• Identify potential funding for renewable heat feasibility study | Low |
| **R9. Develop new community-sited solar within Eau Claire and offer subscriptions to residents** | • Identify possible site locations within the City of Eau Claire<br>• Facilitate a group of potential partners | High |
| **R10. Increase solar-ready buildings in new residential construction** | • Conduct listening sessions with the home builders association and architects, among others<br>• Distribute the solar-ready checklist through city channels | High |
| **R11. Support a solar group-buy program in the Eau Claire area** | • Write a summary of lessons learned and any proposed changes from current program, including feedback from local solar installers | Low |

## Commercial, Industrial, & Institutional Sector

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **C1. Promote the use of the City's Net Zero Energy Building Guide** | • Deploy trainings and communications<br>• Develop incentives or RFP contest<br>• Complete one net zero project by 2022 | High |
| **C2. Support a business recognition program to recognize and promote businesses that have taken action in sustainability, especially relating to energy** | • Solicit input from businesses to determine structure and value of a recognition program<br>• Establish guidelines for a recognition program<br>• Identify key partners to promote program<br>• Recruit businesses to participate | Low |
| **C3. Offer and promote resources to reduce the costs of energy efficiency and renewable energy projects, including financing.** | • Establish a city financing mechanism for business energy efficiency and renewable energy projects<br>• Explore models to use city funding to buy down interest rates on energy efficiency and renewable energy projects | Low |
| **C4. Improve energy efficiency in existing buildings and infrastructure.** | • Design and launch a targeted campaign to encourage business to save energy<br>• Develop and promote targeted information for hospitality, health care, and education sectors on ENERGY STAR equipment return on investment, incentives, and financing options.<br>• Partner with Chippewa Valley Technical College, Xcel Energy, Focus on Energy, and others to reduce the cost of service through rebates and technical assistance. | High |
| **C5. Improve energy efficiency in new construction and major renovations.** | • Promote the City's Net-Zero Building Design Guide<br>• At least one new construction project is built to net zero standards<br>• Explore policy options to integrate energy efficiency into project approval process for new construction and major renovation, especially in cases where the developer requests a change in zoning or is receiving public funding. | Medium |
| **C6. Increase the number of businesses that track energy use through energy benchmarking.** | • Explore city benchmarking policy options<br>• Benchmark and share municipal building energy use to lead by example. | Medium |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **C7. Increase the number of on-site customer-owned solar photovoltaic installations at existing sites.** | • Establish and/or promote a renewable energy resource center with connections and information for local businesses.<br>• Evaluate financial benefits such as tax incentives or cost reductions in the permitting process for businesses that install on-site renewable energy<br>• Identify and study potential project location sites (i.e. businesses with large parking lots or rooftop space) and conduct target outreach to those businesses. | Medium |
| **C8. Increase the number of solar-ready buildings in commercial, industrial, and institutional new construction.** | • Promote the City's Net Zero Energy Guide and Solar-Ready Checklist to plan for future installations<br>• Explore policy options to increase solar-ready design in Eau Claire projects, | Medium |
| **C9. Increase number of commercial subscribers to utility renewable subscription programs.** | • Conduct outreach and promote signups via the City of Eau Claire and utilities.<br>• Include renewable subscriptions in annual recognition awards by City | High |
| **C10. Increase adoption of renewable-powered heating, cooling, and hot water technologies, including geothermal projects.** | • Explore city policies for renewable thermal financial incentives<br>• Include information on geothermal projects for new construction projects | Low |

## Transportation Sector

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **T1. Densify the city** | • Calculate density baselines city-wide, in census tracks and opportunity areas<br>• Determine impacts and density goals<br>• Adjust Comprehensive Plan map and policies<br>• Adjust zoning, development review and transportation demand-centered management/reduction measures | High |
| **T2. Incentivize and require more compact and mixed-use development** | • Utilize Traditional Neighborhood Development ordinance<br>• Require compact and mixed used development requirements when us TIF funds<br>• Research other zoning innovations such as form-based codes<br>• Amend the City's zoning ordinance to adopt Form-based codes or hybrid version<br>• Explore the "EcoBlock" concept for local replication opportunities | Medium |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **T3. Reduce required parking** | • Study parking reduction strategies<br>• Recommended changes<br>• Pass ordinance changes | Medium |
| **T4. Increase the City's bike and pedestrian friendly environments** | • Implement and fund capital projects in the City Bicycle and Pedestrian Plan<br>• Pass a complete streets policy | High |
| **T5. Increase neighborhood walkability** | • Collaborate with experts on designing walkable cities<br>• Implement and fund capital projects in the City Bicycle and Pedestrian Plan<br>• Utilize WalkScore.com to measure, monitor, and improve neighborhood and city walkability | Medium |
| **T6. Launch bike and/or scooter-share programs** | • Community partnerships formed to promote programs<br>• Pass a scooter-share enabling ordinance<br>• At least one bike and/or scooter-share company enter the market | High |
| **T7. Improve transit ridership and access** | • Explore strategies to attract greater ridership<br>• Investigate service improvements in the Transit Development Plan (TDP)<br>• Implement TDP recommendations<br>• Research and apply for available grants | High |
| **T8. Explore on-demand micro-transit** | • Follow micro-transit recommendations in the Transit Development Plan (TDP)<br>• Perform cost-benefit analysis on concept (include EVs)<br>• Explore any public/private partnerships<br>• Pilot coverage area | Medium |
| **T9. Explore a zero-fare transit system** | • Study impact on budget<br>• Explore options for revenue sources<br>• Implement system changes<br>• Measure VMT reductions | Low |
| **T10. Implement electric vehicle roadmap** | • Implement recommendations of plan<br>• Support policies/efforts for marketplace transformation | High |
| **T11. Conduct broad community outreach on electric and alternative fuel vehicles** | • Work with utilities and partners to hold education/marketing events (ride & drives)<br>• Develop a website page for EV information | High |
| **T12. Increase local purchases of electric vehicles** | • Provide dealerships with relevant EV customer information<br>• Encourage partnership between utilities and car dealerships | High |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **T13. Foster EV car/ridesharing/taxi programs** | • Research model practices (e.g., HourCar mobility-hubs in the Twin Cities)<br>• Explore/form public and private partnerships<br>• Explore incentives for fuel-switching with companies serving the community | Medium |
| **T14. Expand electric light duty vehicle charging infrastructure** | • Follow strategies in the EV Roadmap<br>• Continue to work with utilities providers<br>• Apply for EV charging infrastructure grants<br>• Install public/private chargers | High |
| **T15. Work with utility providers to promote charging infrastructure and competitive rates** | • Support/promote utility charging rates<br>• Work with utilities to provide information to residents/businesses on charging options | High |
| **T16. Require and prioritize parking for electric vehicles** | • Research EV siting and zoning best practices<br>• Pass priority EV parking, enforcement and EV-ready requirements | High |

## Waste Sector

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **W1. Utilize 100% of wastewater treatment plant biogas** | • Asses the project economics<br>• Investigate options for EV charging<br>• Secure capital funding | Medium |
| **W2. Continue land application of bio-solids** | • Secure additional fields<br>• Investigate vehicle spreader options to increase capacity | Medium |
| **W3. Establish a zero-refrigeration leak goal** | • Pass a zero refrigerant leak resolution<br>• Create a network and list of companies<br>• Publicly recognize companies | Low |
| **W4. Transition haulers to capture compostables** | • Educate public<br>• Partner with local haulers and business<br>• Study impacts and options for curbside and community compost sites<br>• Launch a program | High |
| **W5. Increase recycling of construction and demolition (C&D) materials** | • Publicize where recycled C&D materials go<br>• Partner with haulers and construction firms<br>• Launch an effective recovery program | Low |

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **W6. Explore organized municipal waste collection** | • Study the costs and benefits of transitioning to an organized system<br>• Engage haulers on recommendations<br>• Survey public and hold community meetings<br>• Potentially pilot recommendations<br>• If successful, enact organized waste ordinance | Low |
| **W7. Explore building a Materials Recovery Facility (MRF)** | • Develop a stakeholder feasibility working group<br>• Study the costs and benefits<br>• Develop business plan<br>• Secure local and other end-markets<br>• Secure facility funding | Medium |

## Cross Cutting Strategies

| STRATEGY | MAJOR MILESTONES | PRIORITY |
|---|---|---|
| **CC1. Continue to utilize partnerships and tools to track required data** | • Maintain internship for data analysis<br>• Utilize ClearPath Software for carbon inventories and goal tracking<br>• Utilities provide energy reports, including net-metered renewable generation and other data improvements | High |
| **CC2. Hire full time staff to implement plan** | • Receive budget approval for REAP staff | High |
| **CC3. Train the next generation of the environmental workforce** | • Inventory local green jobs employers<br>• Conduct interviews with local employers to understand current and future workforce gaps<br>• Work with partners organizations to host a green jobs networking event | Medium |

# APPENDIX A: DETAILED NEAR-TERM STRATEGIES AND TACTICS

This appendix contains additional detail on the strategies included in this plan, including tactics identified by the Steering Committee.

## Biodiversity

**Baseline Activity in 2018:** The city limits tree canopy covers 24% of land (2013) and sequesters 12,725 MTCO2e or 1.4% of total emissions.

**Proposed 2030 Targets:** Protect and enhance the urban forest by increasing tree carbon sequestration by 5% per year (636 MTCO2e) for 20 years over the 2013 baseline.

### *B1. Continue to implement policies, programs and projects as found in the City's official plans.*

*Policy & Planning*

- Continue to implement in City's work plan the policies, program and projects found in the Comprehensive Plan, Multi-Hazards Mitigation Plan, etc.
- Revise plans when needed and maintain consistency with the REAP plan

### *B2. Create a Biodiversity Index*

*Support & Partnerships*

- Work with area partners like Beaver Creek Nature Reserve, UW-EC, CVTC, etc., to profile the biodiversity needs and values of the community
- Hold public/promotional event(s) to raise awareness and find additional partners

*Policy & Planning*

- Create the index and map resources for the planning document
- Consider zoning changes to implement the index

### *B3. Reduce sprawl - loss of biomass carbon sinks*

Target Audiences: City and County governments

*Support & Partnerships*

- Build a movement and organize core city property owners by showcasing the positive impacts of density and the negative impacts of sprawl
- May include how sprawl actually pushes development to surrounding towns, losing tax base, and showing increased costs of building and maintaining infrastructure (roads, sewers, etc.)

*Policy & Planning*

- Explore incentivizing public transit and disincentivize development sprawl
- Modify zoning code to encourage density
- City acquire land to safeguard resources
- Promote mixed use in developed/ing neighborhoods

## *B4. Maintain and Increase Urban Forestation*

*Policy & Planning*

- Expand/preserve a diverse urban tree canopy
- In City parks use marginal lands for maximizing carbon sequestration
- Identify areas to plant fast growing, and resilient trees
- Continue to implement the City's street tree requirements
- Consider enhanced tree planting requirements for any new eco-development business park
- Recognition businesses that plant extra trees
- Coordinate tree and native grass planting with solar PV siting

*Activity & Projects*

- Mass planting on Arbor Day

## *B5. Retain, Restore & Enhance Natural Spaces*

*Policy & Planning*

- Tree preservation ordinance/incentive for saving trees
- Continue to enforce steep slope (20%) provisions through the DNR and MPO.

*Education & Engagement*

- Education campaign to replace invasive species, with a particular focus on the jumping worm
- Work with DNR to more broadly publicize annual native plant sale
- Research and promote ways for invasive controls without herbicides and pesticides

*Activity & Projects*

- Annual invasive species cleanup to preserve the tree canopy

## *B6. Require more natural space for new development*

Target Audiences: Real estate developers

*Activity & Projects*

- Create a calculator tool that demonstrates pre-development carbon values vs. proposed post-development values to determine what mitigation strategies must be taken to align with 2050 goals. Incorporate into the City's development review process.

*Policy & Planning*

- Establish carbon sink preservation requirements for new development
- Use the City's Planned Development Ordinance to cluster development so that natural features are preserved and accommodate for lost of natural carbon sequestration sinks by enhancing the built environment such as with lawn landscaping amenities or additional tree plantings
- Center new developments on walkable greenspaces or trail corridors rather than auto-centric street fronts[21]
- For site and building design, use net-zero guide and consider biophilic strategies that works with the site and micro-climate[22]

*Education & Engagement*

- Promote education opportunities to enrich the carbon amounts in soil

## *B7. Increase use of Trails as biodiversity corridors*

*Policy & Planning*

- Leverage trail corridors and marginal right-of-way lands for carbon sequestration opportunities
- Analyze trails for improvements
- Determine funding and operational needs

*Activity & Projects*

- Increase plantings per recommendations
- Include trees in new riverwalk trails and all new park trails

## *B8. Ease barriers to increase Alternative Lawns*

*Support & Partnerships*

- Partner with UW-Extension AG, Master Gardeners, and Youth groups to promote sustainable landscaping and urban AG in the city
- Encourage neighborhood association to support alternative lawns

*Education & Engagement*

- Campaign to change the cultural preferences showing what a yard can look like that isn't al green grass
- Demonstrate alternative landscaping through pilot sites
- Promote education about lawnmowers as a source of pollution and promote alternatives to gas-powered lawnmowers including alternative laws, electric and push mowers

*Policy & Planning*

- Amend the ordinance to element the required permit

[21] University of California Davis West Village at https://www.ucdavis.edu/news/zero-net-energy
[22] Bosco Verticale apartments, Milan, Italy at https://en.wikipedia.org/wiki/Bosco_Verticale

## *B9. Increase on-site filtration and stormwater capture*

*Policy & Planning*

- Continue to implement the City's stormwater policy and meet DNR suspended total solids requirements and consider enhancements
- Consider a green infrastructure ordinance
- Collect data on runoff using real-time monitoring of stormwater runoff in priority areas

## *B10. Increase safe utilization of grey water*

*Policy & Planning*

- Support modification to state code to allow for greywater use

## *B11. Reduce herbicides, pesticides, fertilizers*

Target Audiences: homeowners and institutions

*Policy & Planning*

- Model runoff from priority watersheds to determine inputs
- Implement stronger regulations and fines, if allowed by State
- Allow community composting (with restrictions) in community gardens

*Education & Engagement*

- Reuse composting for soil amendments at home
- Measure and publicize pesticide and fertilizer residues entering the Chippewa River at different neighborhood sites

## *B12. Support local food and local producers & farmers*

*Support & Partnerships*

- Continue to provide public and private venues to sell local food.
    - Continue to financially support the FoodShare Market Match program at Downtown Farmers Market.
- Support urban AG policies/practices to reduce strain on AG large practices that create major emissions
- Partner with farms to support no-till and cover cropping techniques
- Attract "urban agriculture" businesses to Eau Claire and pair with year around Farmers Market in an indoor space
- Recruit restaurants or growers that have hydroponics food production as a year around feature with interior winter green space and same expanded outdoors in summer

*Education & Engagement*

- Develop community gardens and youth education/participation programs
- Promote available resources like the Farm Fresh Atlas[23]

[23] Farm Fresh Atlas at https://farmfreshatlas.org/

- Promote the local food benefit of economic development

# Residential Sector

## Overarching Strategies

### *R1. Promote the use of the City's Net Zero Energy Building Guide.*

- Deploy trainings and communications to increase awareness and implementation of net zero energy strategies as found in the guide.
- Provide guide to local home shows or remodeler showcase events
- Coordinate with education opportunities such as a demonstration home with Chippewa Valley Technical College

### *R2. Increase prevalence of energy efficient, low emissions affordable housing development.*

- Partner with the City's Affordable Housing Committee and/or Regional Housing Task Force
- Partner with affordable housing developers such as Habitat for Humanity
- Provide information on the cost-savings benefits from energy efficiency and solar

### *R3. Support a residential net zero energy development.*

- Partner with stakeholders to research the concept for buy-in
- Develop the vision and steps needed for approval
- If feasible, acquire land or use existing land owned with Xcel Energy such as in Gateway Business Park
- Seek via RFI or RFPs interested developers/builders who fit the vision
- Develop a residential housing arrangement or subdivision that is energy self-sufficient (i.e., designed using energy efficiency, passive energy, solar and storage, smart appliances/meter/grid technologies, etc.)

## Energy Efficiency

***Baseline Activity in 2018:*** *1.5% electricity savings and 0.9% natural gas savings annually*

**Proposed 2030 Targets:** 2% electricity savings and 1% natural gas savings annually

### *R3. Increase awareness of energy efficiency among Eau Claire residents*

Target Audiences: All households with a focus on older homes; contractors

*Education & Engagement*

- Launch a campaign to celebrate the low-carbon and energy lifestyle leaders in the community. Consider highlighting leaders in the "Parade of Homes" event.
- Include easy energy savings tips in city communications (e.g. turn off lights, and unplug inactive electric devices).

- Work with Focus on Energy to distribute information on home energy loss, including the financial benefits of insulation, programmable thermostats, and efficient lighting. Target homes in Eau Claire's older neighborhoods.
- Explore and promote additional resources including the Green Building Advisor
- Partner with community organizations to host workshops for residents and contractors on relevant and popular topics, including "Ice Dams and Icicles" explaining energy efficiency solutions to common household issues.
- Work with utilities to sign up Eau Claire Residents for Xcel Energy's My Energy and Eau Claire Electric Cooperative's Smart Hub programs to track energy use.

*Activities & Projects*

- Work with construction classes at Chippewa Valley Technical College to build a demonstration net-zero residential home open to the public

*Support & Partnerships*

- Work with local neighborhoods, businesses, and/or institutions to launch a new eco-teams program, including contests for energy savings

## *R4. Promote Energy Audits, Energy Efficiency Rebates and Financial Incentives*

Target Audiences: homeowners, landlords, renters, students

*Education & Engagement*

- Host information on the Eau Claire website about home energy improvement options, including available energy efficiency programs and where to purchase ENERGY STAR appliances.
- Educational campaign to encourage residents to sign up for demand-response programs from their utility
- Assemble a group of volunteers to promote energy efficiency options at local events through tabling. Collaborate with Focus on Energy and Xcel Energy to support tabling efforts and provide materials.
    - Explore event opportunities such as Farmers Market and events like the Solar Power Hours hosted by MREA
- Continue to promote Property Assessed Clean Energy (PACE) for qualifying multi-family residential.
- Promote the use of the Net Zero Building Guide, HERS rated energy efficient homes, LEED for Homes, and Focus on Energy's New Home Certification programs.

*Policy & Planning*

- Establish a City fund to buy down the cost of home energy efficiency measures for residents, especially for low income residents.
- Provide additional financial support from the City to accelerate use of these existing programs for older homes. [similar to La Crosse's Mayor's challenge]
- Explore and promote city financial incentives for residents participating in energy programs,

including reduced property taxes.
- Consider working with the state to establish residential PACE in Wisconsin and Eau Claire

*Activities & Projects*

- Host clinics to help residents complete rebate paperwork or purchase discounted efficiency products online
- Partner with UWEC Student and Community Outreach on Energy Efficiency (SCORE) to provide energy efficient, cost-saving bulbs and appliances for income qualifying residents

*Support & Partnerships*

- Facilitate coordination between agencies and organizations that offer programs locally, such as Focus on Energy and Western Dairyland.
- Partner with local community organizations serving under-resourced households to promote and support energy audits for low-income residents

### *R5. Pass a Home Energy Rating Ordinance*

Target Audiences: Developers, Builders, Realtors, Homeowners, Landlords

*Policy & Planning*

- Explore feasibility for a local energy rating disclosure policy for Eau Claire homes.
- Explore policy examples from other cities including Minneapolis and Portland
- Promote renewable energy as part of the disclosure
- Consider utilizing existing rating programs such as the Home Energy Rating System.
- Highlight landlords or management companies with energy-efficient rentals

## Renewables

***Baseline Activity in 2018:*** *Approximately 2 MW of installed solar within Eau Claire. There were 1,216 total renewable subscribers in 2017 (Windsource + solar gardens); 12 new renewable signups in 2018 through Focus on Energy*

**Proposed 2030 Target:** Convert 200 residential households per year to all renewable electricity, and 20 households per year to renewable thermal (including geothermal HVAC and solar thermal)

### *R6. Increase number of residential subscribers to utility renewable subscription programs (e.g. Renewable*Connect or Evergreen)*

Target Audiences: All households in Eau Claire

*Education & Engagement*

- Produce outreach materials co-branded between the City and utilities
- Promote sign ups from community leaders and local celebrities
- Generate coverage of program options in local media

*Activities & Projects*

- Design city-wide challenge for residents to subscribe 100% to renewable energy

Support & Partnerships

- Work with local nonprofits, churches, and advocacy groups to conduct outreach, including door-to-door outreach.

## *R7. Increase adoption of renewable-powered heating, cooling, and hot water technologies, including geothermal and air source heat pump projects*

Target Audiences: Residential new construction and retrofit projects

*Education & Engagement*

- Develop technical materials about the benefits of geothermal and other renewable-powered heating, cooling, and hot water options.
- Include relevant information as part of new homeowner's packet.
- Promote Focus on Energy heat pump rebates for electric heat customers, coupled with renewable subscription options
- Use the net-zero design guide and information from the Geothermal Association to share best practices for new construction on urban lots.

*Support and Partnerships*

- Engage with local contractors on technologies and options for renewable heat, including how to overcome potential barriers

*Activities & Projects*

- Conduct a feasibility study to evaluate the potential for renewable-powered heating, cooling, and hot water in Eau Claire, potentially in partnership with the University
- Identify the feasibility and potential public-private partnership opportunities for a geothermal district heating system demonstration project.

## *R8. Develop new community-sited solar within Eau Claire and offer subscriptions to residents*

Target Audiences: General Public

*Activities & Projects*

- Identify possible municipal site locations within the City of Eau Claire
- Work with Xcel Energy and developers to develop sites.
- Reserve a percentage of subscriptions for income-qualified residents for a set amount of time or until filled.

*Support and Partnerships*

- Facilitate a working group of potential project partners such as Eau Claire County, Xcel Energy,

and the University of Wisconsin Eau Claire to increase feasibility and coordination opportunities

## *R9. Increase the number of solar-ready buildings in residential new construction*

Target Audiences: Builders and Construction Companies

*Education & Engagement*

- Compile list of resources available to help homeowners install renewable energy and/or energy storage in their homes, including financing, grants, and local funding to mitigate costs
- Promote the City's Net Zero Energy Guide and Solar-Ready Checklist
- Highlight rental properties that are using solar energy

*Support & Partnerships*

- Identify home builders with leading performance in the solar ready market
- Engage construction companies in the process of drafting solar-ready requirements.

*Policy & Planning*

- Explore including sustainable building requirements when projects receive city financing (e.g. Tax Increment Financing)
- Work at the state level to advocate for changes to local building codes to increase solar ready buildings
- If allowed by state law, pass a building code requiring solar ready buildings by 2022

## *R10. Support a solar group-buy program in the Eau Claire area*

Target Audiences: All households in Eau Claire

*Education & Engagement*

- Evaluate lessons learned from Solarize Eau Claire[24] to apply to future projects
- Lead campaign to educate residents about solar group buys

*Support & Partnerships*

- Partner with local solar installers to provide program input
- Engage local advocacy groups to set standards for solar group buy

[24] This refers to a 2019 solar group buy program, run by the Midwest Renewable Energy Association.

# Commercial, Industrial, and Institutional Buildings

## Overarching Strategies

### *C1. Promote the use of the City's Net Zero Energy Building Guide.*

- Deploy trainings and communications to increase awareness and implementation of net zero strategies as found in the guide

### *C2. Support a business recognition program to recognize and promote businesses that have taken action in sustainability, especially relating to energy*

Target Audiences: All Eau Claire Businesses, City Staff, Eau Claire Area Chamber of Commerce

*Education & Engagement*

- Publish and/or celebrate a "Best Practice Renewable Businesses" list annually of local business that achieve certain eco-friendly milestones. Explore working with the Chamber of Commerce's Green Business Program
- Create a series of monthly business-specific outreach meetings (breakfast//lunches) to inform businesses about and promote various initiatives, including utility renewable energy programs
- Through this program, promote holistic models of eco-development in new construction and major renovations

*Support & Partnerships*

- Determine structure of the recognition program and how it relates to existing programs such as LEED, ENERGY STAR, and others.
- Determine criteria for program based on the goals of this plan and create information for businesses hoping to be recognized
- Work with local partners, including the Eau Claire Area Chamber of Commerce to support a sustainable business recognition program

### *C3. Offer and promote resources to reduce the costs of energy efficiency and renewable energy projects, including financing*

Target Audiences: Businesses, nonprofits, and organizations with limited access to capital

*Education & Engagement*

- Promote the financing resources that exist for Eau Claire businesses, including the County commercial PACE offering
- Promote existing financial support and resources that exist for energy efficiency and renewable energy projects, including rebates from Focus on Energy and tax incentives.

*Policy & Planning*

- Explore options of the City offering low cost loans for energy efficiency and renewable energy projects for local businesses and institutions

- Explore feasibility of City property tax reduction benefits for energy efficiency
- Explore models to use city funding to buy down interest rates on energy efficiency and renewable energy projects
- Explore the feasibility of launching a revolving fund for energy efficiency projects

## Energy Efficiency

**Baseline Activity in 2018**: Annual savings of 2.3% for electricity, and 1% for natural gas.

**Proposed 2030 Targets**: Achieve 3% energy savings per year in electricity and 1% savings per year in natural gas

### *C4. Improve energy efficiency in existing buildings and infrastructure*

Target Audiences: Existing businesses and institutions

*Education & Engagement*

- Show community success stories of energy efficiency with credible testimonials or case studies, published through city and local business channels and showcased at breakfast/luncheon series for businesses. Explore partnering with the local Chamber of Commerce to promote success stories and case studies.
- Track progress toward community wide energy savings goal in a publicly visible way
- Conduct targeted outreach to largest consumers
- Launch an awareness campaign targeted at building managers outlining how to do building recommissioning to establish awareness of HVAC commissioning as low-cost energy efficiency action.[25] Target campaigns during the beginning of heating and cooling seasons
- Promote existing Focus on Energy and Xcel Energy programs, with a focus on audit programs that support project implementation
- Promote Xcel Energy and Focus on energy's Mid-Market Program
- Develop and promote targeted information for hospitality, health care, and education sectors on ENERGY STAR equipment return on investment, incentives, and financing options.
- Recommend best products for Eau Claire's climate (e.g., as air source heat pumps for furnaces and hybrid water heaters that are either split fuel or fully electric).
- Promote trade partners that sell or install ENERGY STAR rated products.

*Support & Partnerships*

- Partner with Chippewa Valley Technical College, Xcel Energy, Focus on Energy, and others to reduce the cost of service through rebates and technical assistance.

*Activities & Projects*

- Create or promote existing simple cost savings calculator to show company return on investment from energy efficiency.

[25] A Recommissioning study will look to improve the efficiency of existing building operations by identifying and tuning up less-than-optimal equipment within your facility. Source xcelenergy.com

- Require ENERGY STAR purchases by the city as an example and explore ways to share experience with others
- Convert City streetlights to LED

### *C5. Improve energy efficiency in new construction and major renovations*

Target Audiences: Developers, large businesses, institutions

*Education & Engagement (EE)*

- Distribute information promoting LEED, WELL or other certification programs for building renovations through the City's permitting process
    - Develop informational materials on LEED and Net Zero Energy
    - Consult with LEED and Net Zero Energy professionals on best practices of building design and retrofitting and share those with local developers
    - Work with businesses or local colleges to establish educational and research teams/businesses to analyze and present proposals for current best practices in goods processing/manufacturing.
- Promote the City's Net-Zero Building Design Guide

*Policy & Planning (PP)*

- Designate "green zones" of residential/commercial development where, for example, buildings are held to certain building efficiency standards as allowed by state law.
- Explore policy options to integrate energy efficiency into project approval process for new construction and major renovation, especially in cases where the developer requests a change in zoning or is receiving public funding.
- Explore options to reduce permitting fees for projects that qualify for recognition in Green Certification programs

### *C6. Increase the number of businesses that track energy use through energy benchmarking*

Target Audiences: Businesses over 10,000 square feet

*Education & Engagement*

- Promote Xcel Energy's benchmarking data transfer tool for automated energy use updates in ENERGY STAR Portfolio Manager.
- Benchmark and share municipal building energy use to lead by example.
- Encourage buildings to share results publicly as part of leader recognition and case studies.

*Policy & Planning*

- Explore city energy and water benchmarking policy options

## Renewables

***Baseline Activity in 2018**: Approximately 2 MW of installed solar within Eau Claire. 16 total renewable*

*subscribers in 2017 (Windsource® + solar gardens) in Eau Claire County; 2 new renewable signups in 2018 through Focus on Energy. Approximately 36 solar installations (residential and commercial) across the city.*[26]

**Proposed 2030 Targets**: 15 new renewable electric customers per year to reach a total of 5 MW by 2030; 5 new renewable thermal customers per year.

## *C7. Increase the number of on-site customer-owned solar photovoltaic installations at existing buildings and sites*

Target Audiences: Businesses and institutions, especially those with large parking lots and/or large flat roofs

*Education & Engagement*

- Provide a renewable energy resource center with connections and information for local businesses, including:
    - Connecting solar installation contractors with local businesses
    - Promoting existing tools that assess solar rooftop potential[27]
- Create a targeted campaign to encourage companies with large rooftop spaces or parking lots to install solar

*Policy & Planning*

- Evaluate financial benefits such as tax incentives or cost reductions in the permitting process for businesses that install on-site renewable energy

*Activity & Projects*

- Identify and study potential project location sites (i.e. businesses with large parking lots or rooftop space) and conduct target outreach to those businesses, providing resources
- Promote a solar group buy for small commercial businesses
- Work with Xcel Energy to investigate a community solar farm for large users to help meet their shared sustainability goals
- Work with businesses and developers to encourage the installation of solar arrays for clusters of businesses (e.g., downtown block, shopping mall)
- Work with artist communities to create beautiful and creative solar panel design for public spaces
- Utilize City and other local communication channels to publicize existing solar installations, including city-owned solar installations once completes

[26] Google Project Sunroof
[27] For example, NREL's PV Watts, Google Project Sunroof, or the Rocky Mountain Institute solar calculator

## *C8. Increase the number of solar-ready buildings in commercial, industrial, and institutional new construction*

Target Audiences: Businesses, institutions, and real estate developers

*Education & Engagement*

- Introduce a platform for sharing best practices on solar readiness targeted towards Eau Claire developers
- Promote the City's Net Zero Energy Guide and Solar-Ready Checklist to plan for future installations

*Policy & Planning*

- Explore policy options to increase solar-ready design in Eau Claire projects, including the following:
- Working at the state level to advocate for changes to local building codes to incentivize solar ready buildings
- If allowed by state law, establishing citywide ordinances or permitting incentives
- Explore including sustainable building requirements including solar-ready infrastructure when projects receive city financing (e.g. TIF)
- Prioritize permitting processes to fast track or give other preference to solar-ready projects

## *C9. Increase number of commercial subscribers to utility renewable subscription programs (e.g. Renewable*Connect or Evergreen)*

Target Audience: All commercial customers

*Education & Engagement*

- Conduct outreach and promote signups via the City of Eau Claire and utilities.
    - Design messaging to include emphasis on subscriptions as a no hassle way to go 100% renewable, with no requirements and no renovations
- Identify and offer resources to help businesses navigate costs, benefits, and regulations

*Policy & Planning*

- Explore Incentives provided by utilities or government to buy down higher subscription costs
- Include renewable subscriptions in annual recognition awards by City

## *C10. Increase adoption of renewable-powered heating, cooling, and hot water technologies, including geothermal projects*

Target Audience: Commercial, industrial, and institutional buildings

*Policy & Planning*

- Explore city policies for renewable thermal financial incentives
- Explore providing an incremental startup or other incentive reduce impact of high installation

costs

*Activities & Projects*

- Explore feasibility and leading opportunities for waste heat utilization for thermal loads within Eau Claire
- Work with organizations (Green Chamber of Commerce) and Focus on Energy to identify target users where this technology is the most effective.
- Include information on geothermal projects for new construction projects

# Transportation

**Baseline Activity in 2018:** Total community vehicle miles travel (VMT) totaled 728,824,567 with about 92% of those miles coming from gasoline fueled vehicles.

**Proposed 2030 Targets:** Electric vehicles increase to 10% of vehicle miles traveled (VMT) traveled and an increase in vehicle occupancy from the Midwest average of 1.63 persons per vehicle to 2.

## Land Use

### *T1. Densify the city*

Target Audiences: Developers

*Policy & Planning*

- Calculate density baselines city-wide, in census tracks and opportunity areas
- Determine impacts and density goals
- Adjust Comprehensive Plan map and policies
- Adjust zoning, development review and transportation demand-centered management/reduction measures

### *T2. Incentivize more compact & mixed-use development*

Target Audiences: Developers

*Policy & Planning*

- Promote the use of the City's TND – Traditional Neighborhood District ordinance.
- Require compact and mixed used development requirements when us TIF funds
- Research other zoning innovations such as form-based codes
- Amend the City's zoning ordinance to adopt Form-based codes or hybrid version
- Continue to enforce the City's extraterritorial review area to limit sprawl.
- Consider establishing "infrastructure fees" for development outside of existing roads and utilities.
- Promote density bonuses for developers.

*Support & Partnerships*

- Work with adjacent towns on cooperative boundary planning.
- Explore partnerships to create a renewable smart-home development.
- Grid integration opportunities such as the Oakland, CA "EcoBlock" pilot concept

### *T3. Reduce required parking*

Target Audiences: Developers

*Policy & Planning*

- Coordinate approach with bike/scooter share strategy
- City passes reduction in number of parking spot requirements and creation of electric vehicle-ready requirements, works with developers, city council, and city staff.
- Implement recommended changes of the City's parking study.
- Study and promote transportation demand management (TDM) strategies in key build- up areas (employment and housing concentrations) to encourage induced demand for alternative modes of transportation.

## Alternative modes of transportation

### *T4. Increase the City's Bike and Pedestrian friendly environments*

*Policy & Planning*

- Continue to Implement the recommendations of the City's Bike and Ped. Plan
- Pass a "complete streets" resolution with green infrastructure accommodations

### *T5. Increase neighborhood walkability*

Target Audiences: Urban residents

*Policy & Planning*

- Consider collaborating with Walkable City planning expert
- Implement and fund capital projects in the City Bike and Ped plan, Safe Routes to School Plan, Safe Routes to Parks, Regional Bike Plan, and Comprehensive Plan with its trail network buildout.
- Integrate in new neighborhoods
- Continue to implement sidewalk gap closures within the neighborhoods identified in the Bicycle and Pedestrian Plan

*Education & Engagement*

- Promote the "walk score" website

*Activity & Projects*

- Pilot "Open Street" days in downtown Eau Claire to create pedestrian-only temporary zones
- Use signage to highlight walkable neighborhoods and business districts
- Commission local artists to highlight walkable neighborhoods/business districts using sidewalk

or other forms of art

## *T6. Launch Bike and/or Scooter share programs*

Target Audiences: Students and others in need of transportation

*Policy & Planning*

- Explore revisions to the City bicycle sharing program to include scooters
- Leverage the health care providers in Eau Claire to sponsor program

*Support & Partnerships*

- Partner with UWEC, health care, business, and others to help implement the program

## *T7. Improve transit services and access*

Target Audiences: Choice Riders, Students, Non-Riders

*Policy & Planning*

- Investigate service improvements in the Transit development Plan (TDP), including greater frequency of fixed routes, on-demand EV mobility ("Micro-transit"), and reducing last-mile barriers.
- Explore partnering with ride share companies active in Eau Claire to offer free and/or discounted rides to income-qualifying residents

*Activity & Projects*

- Design new transit center to incorporate flexible transit options (i.e. EV buses and on-demand mobility) along with installing on-site renewables
- Continue to research and apply for available grants for innovative transit projects which align with the 2050 goals.

*Support & Partnerships*

- Explore partnerships with ride-share entities that offer EVs.

## *T8. Explore on-demand micro-transit*

*Policy & Planning*

- Follow micro-transit recommendations in the Transit Development Plan (TDP)
- Perform cost-benefit analysis on concept (include EVs)

*Activity & Projects*

- Pilot coverage area

*Support & Partnerships*

- Explore any public/private partnerships

### *T9. Explore a zero-fare transit system*

*Policy & Planning*

- Study impact on budget
- Explore options for revenue sources
- Implement system changes
- Measure VMT reductions

## Alternative Fuel Vehicles

### *T10. Implement electric vehicle roadmap*

Target Audiences: Community, Municipality, and car dealers

*Policy & Planning*

- Implement recommendations of plan
- Support policies/efforts for marketplace transformation

### *T11. Conduct broad community outreach on electric and alternative fuel vehicles*

Target Audiences: Community and Car dealers

*Education & Engagement*

- Add charging station presence signs for off ramps and at local businesses
- Educate community on environmental and cost savings benefits of EVs
- Educate community on EV ready housing, garages – separate educational initiatives for residents and businesses
- Develop a website page for EV information
- Add a link to or embedded map highlighting public electric vehicle charging stations in Eau Claire to the Eau Claire city website

*Support & Partnerships*

- Work with utilities and partners to hold education/marketing events (ride & drives)
- Collaborate with Xcel, Eau Claire Energy Cooperative, CVTC and UW-EC
- Consider working with Visit Eau Claire to publicize charging stations.

### *T12. Increase local purchases of electric vehicles*

Target Audiences: Drivers and Car Dealers

*Activity & Projects*

- Encourage partnership between utilities and car dealerships
- Provide dealerships with relevant EV customer information

- Rebate incentives for electric vehicles sponsored by the local electric utilities

## *T13. Foster EV car/ridesharing/taxi programs*

*Policy & Planning*

- Follow models of best practices like Xcel Energy in Minneapolis
- Explore policies that support car sharing
- Prioritize electric vehicles for pilot program
- Explore integrating car sharing with a microgrid transit system and alternative modes of transportation including bicycles and scooters.

*Activity & Projects*

- Pilot a car sharing program in Eau Claire

## *T14. Expand electric light duty vehicle charging infrastructure*

*Education & Engagement*

- Provide information to homeowners about level 2 charging options for homes, including promoting utility programs to reduce costs

*Policy & Planning*

- Develop EV roadmap with Xcel Energy's Partners in Energy and implement recommendations

*Activity & Projects*

- Apply for EV charging grants
- City invests Capital Improvement Plan funding to install public charging stations in public parking Work with partners in developing level 2/fast charging opportunities in the city
- Consider purchasing electric or hybrid vans for Eau Claire Transit microtransit

## *T15. Work with utility providers to promote charging infrastructure and competitive rates*

*Policy & Planning*

- Support/promote utility charging rates
- Work with utilities to provide information to residents/businesses on charging options

## *T16. Require and prioritize parking for electric vehicles*

*Policy & Planning*

- Research EV siting and zoning best practices
- Pass priority EV parking, enforcement and EV-ready requirements

## Municipal Operations

- TBD

# Waste

**Baseline Activity in 2018:** Baseline from 2009 DNR state waste characterization study: Organics (23%) & Construction & Demolition (21%)

**Proposed 2030 Targets**: Divert 50% of organic waste and 50% of construction & demolition streams

### *W1. Utilize 100% of wastewater treatment plant biogas*

Target Audiences: Eau Claire residents

*Activity & Projects*

- Asses the project economics
- Investigate options for EV charging
- Continue to capture methane and seek to capture excess
- City invest in a biodigester

### *W2. Continue land application of bio-solids (natural fertilizers)*

Target Audiences: Landfill. City staff/operations

*Activity & Projects*

- City invest in a holding tank and vehicle spreader options to increase capacity
- Increase more customers for spreading sludge

*Support & Partnerships*

- Work with private farmers

### *W3. Establish a zero refrigeration leak goal*

Target Audiences: commercial enterprise

*Policy & Planning*

- Pass a zero refrigerant leak resolution
- Create a network and list of companies
- Publicly recognize companies
- Explore requiring chlorofluorocarbon refrigerant audits

### *W4. Transition haulers to capture compostables*

Target Audiences: residents, haulers

*Support & Partnerships*

- Work with County and local waste businesses to develop mechanisms and programs to increase

diversion rates

*Policy & Planning*

- Determine uses for the compost end product such as carbon and soil amendments
- Study impacts and options for curbside and community compost sites
- Explore creating an incentive for residents to compost
- Establish a solid waste diversion goal
- Launch a program

*Education & Engagement*

- Educate public about proper composting

## *W5. Increase recycling of construction and demolition (C&D) materials*

*Education & Engagement*

- Educate and encourage private sector to recover at least 75% of waste stream
- Provide signage and protocols on how to keep the waste stream clean

*Support & Partnerships*

- Work with a material recovery center/haulers to increase rate in city
- Haulers to inform contractors to properly recover materials at construction sites.

*Activity & Projects*

- Continue to recover materials at City projects per policy

## *W6. Initiate organized municipal waste collection*

Target Audiences: waste haulers

*Policy & Planning*

- Study the costs and benefits of transitioning to an organized system
- Engage haulers on recommendations
- Survey public and hold community meetings
- Potentially pilot recommendations
- If successful, enact organized waste ordinance

## *W7. Explore building a Materials Recovery Facility (MRF)*

*Activity & Projects*

- Ensure that recyclables are being recycled
- Explore end markets for all materials

*Support & Partnerships*

- Work with Eau Claire County and Dunn County's solid waste and recycling transfer system

- Develop a stakeholder feasibility working group

*Policy & Planning*

- Study the costs and benefits
- Develop business plan

# Cross Cutting Strategies

## *CC1. Continue to utilize partnerships and tools to track required data*

Target Audience: City of Eau Claire

Support & Partnerships (SP)

- Continue to partner with local colleges to secure internship assistance
- Continue to request community energy reports from Xcel Energy and Eau Claire Energy Cooperative. See that reports provide customer total renewable energy generation.
- Update carbon and renewable energy inventories
- Maintain ClearPath membership
- Track metrics and goals in the REAP plan
- Report progress and metrics in annual sustainability reports

## *CC2. Hire a full time city staff to work on achieving the goals and targets of this Renewable Energy Action Plan.*

Target Audience: City of Eau Claire

*Support & Partnerships (SP)*

- Add proposal to hire a full time City staff to the City's budget
- Develop a work plan for staff based on the strategies and milestones of this plan

## *CC3. Work with local institutions to train the next generation of the environmental workforce.*

Target Audience: Local educational institutions, youth and young professionals

- Identify local institutions with an interest in supporting Green Job Training
- Support curriculum development

# APPENDIX B: KEY LONG TERM INITIATIVES: 2030-2050

The ten-year strategies included in this plan will meet the City's interim carbon reduction goal of a 30% reduction over 2015 levels by 2030. However, beyond that time period, more transformational changes will need to take place in order to capture carbon savings. These strategies include denser urban development and a significant reduction in transportation miles traveled, transitioning building energy use from natural gas to decarbonized electricity, and major reductions in waste.

While these strategies will not be complete within the next ten years, there are foundational activities that need to begin during this time period. The sections below introduce these transformational strategies and the building block activities needed to support them.

| **Major Pathways Summary to 2050 goals** |
|---|
| Technological breakthroughs & price declines |
| Decarbonized and Renewable Grid Electricity (Wind, PV, hydro) |
| Distributed Renewable Generation (PV & Geothermal) |
| Heat fuel-switching to renewables |
| Energy Storage (electricity and heat) |
| Smart grid districts, blocks and buildings |
| Electrification of transportation |
| Hydrogen to power heavy-duty transport |
| Major reductions in single occupancy vehicles (SOV) miles traveled by transit, biking, and walking |
| Biodiversity to offset carbon |
| Zero waste goal |

## Biodiversity

**Increase urban integration of natural architecture including biophilic design**

Biophilic design seeks to use nature to meet health, well-being, and productivity outcomes that are beneficial.

*Building Blocks*

- Research and connect nature with key performance indicators for school, work, home, faith-based, and play communities
- Determine best practices for local geography and needs
- Work with partners to create demonstration prototype for replications
- Pass ordinance permitting biophilic site and building design elements such as trees, landscaping, green roofs, bio walls, aquaponics, greenhouses, rainwater harvesting, thermal massing, etc.

**Create a campaign to market the benefits of sustainable & "green" homes**

There is currently very little focus on the benefits of a "green" home in the city. Green is a broad description. It could encompass a very energy efficient home with building materials that have low-to no volatile organic compounds (VOCs), or a building foundation that is incorporated respectfully into the natural terrain and uses native landscape species.

*Building Blocks*

- Build on the City's Net-Zero Energy Guide for sustainable and green construction with additional trainings, public awareness campaigns, design competition for a major commission, and incentives
- Through the Parade of Homes or other tours, market the benefits of a Net-Zero sustainable designed home
- Utilize existing ratings systems like Leadership in Energy and Environmental Design, etc.

**Transfer of Development Rights to protect nature and achieve sustainable growth**

A way to safeguard nature and guide where urban growth should occur is to allow the transfer or trading of development rights (TDRs)[28] so that there is development compensation in return for protecting environmental sensitives or prime agricultural lands.

*Building Blocks*

- Research models that have been shown to be effective
- Use real estate assessing, the Biodiversity Index, carbon value development calculator, etc. for determining credits of these assets for internal site transfers and/or externals sales
- Work with multi-jurisdictional governmental units to achieve buy-in on rural development, urban compact growth, agriculture, and ecosystem areas and TDR market standards
- Determine sending and receiving zones
- Pass a transfer of development rights (TDRs) system across the jurisdictions
- Administer the program and TDR bank.

# Residential

**Pass a residential rental energy efficiency requirement**

Residential rental markets are often a particularly hard area to tackle, as landlords may lack incentives to install energy-saving measures when the tenant pays energy bills. One way that jurisdictions have begun to address this issue is by passing residential energy efficiency requirements that require disclosure or upgrades for rentals.

*Building Blocks*

- Convene landlords in Eau Claire to discuss feasibility, challenges, and possible structure of a rental energy efficiency requirement

[28] https://www.uwsp.edu/cnr-ap/clue/Documents/PlanImplementation/Transfer_of_Development_Rights.pdf

- Find volunteer property owners to participate in a pilot program and explore offering tax incentives for those participating
- Explore policy options from peer cities, including policies that
- Establish ratings for buildings
- Incentivize building owners to share utility costs with tenants
- Require energy disclosure for rentals

**Transition to real time or time of use energy billing for all customers**

As electric utilities deploy advanced energy meters, numerous options exist to structure electricity rates that vary by time of day. This will allow residential electricity demand to shift to less expensive times of day and facilitate greater renewable electricity integration.

*Building Blocks*

- Conduct a utility pilot of advanced meter deployment and time of use rates

**Increase integration of battery storage for residential homes, especially in conjunction with on-site solar PV**

Battery storage allows residents to store solar generation on-site and then use the electricity when they need it most. In addition, residents can manage the time of electricity use for lowest costs, and retain electricity in the event of an outage. These technologies are still cost prohibitive for many customers thought costs are expected to come down over the next decade.

*Building Blocks*

- Identify funding sources for a residential solar plus storage demonstration project.

# Commercial, Industrial, and Institutional

## Energy Efficiency

**Work with local utilities to accelerate adoption of smart grid technologies and real time energy billing.**

Smart grid technologies, such as real time energy billing is currently available and has the potential to help customers reduce energy bills by providing detailed energy use information. But this technology has not been widely adopted in Wisconsin yet. In order to increase adoption, the City will work to educate businesses about its availability and benefits.

*Building Blocks*

- Roll out a pilot program with large industrial customers to determine payback
- The utility deploys smart meters to commercial customers
- Host educational events and advertisements to promote benefits and how to use the technology to improve energy efficiency.

**Adopt a building code for commercial buildings in Eau Claire with more stringent efficiency requirements**

Building codes are an essential mechanism for improving energy efficiency in new construction and major renovation projects. Wisconsin currently has a statewide building code that preempts local jurisdictions from passing more stringent codes or requirements. Changes to the state law and allowances would need to happen before Eau Claire could pass its own codes or requirements.

*Building Blocks*

- Advocate for a more stringent commercial code or stretch codes at the state level

**Develop an eco-industrial/business park**

An eco-industrial park would be a site within Eau Claire that demonstrates closed loop manufacturing and business practices, such as businesses focused on the circular economy, or co-locating businesses that can make use of waste streams as inputs to new processes.

*Building Blocks*

- Assess interest and possible tenants for an eco-industrial park
- Review existing and relevant examples from other global cities

**Support, educate, and market the benefits of the using reflective roofs in the building sector**

Reflective roofs, also known as a "cool roof", can be designed to reflect more sunlight and absorb less heat than a standard roof. Reflective roofs can be made of highly reflective paint, covering or reflective tiles or shingles and make a significant impact on the temperature of a roof. A standard or dark roof can reach temperatures of 150°F or more in the summer while a cool or reflective roof can stay more than 50°F cooler under the same conditions. [29]

*Building Blocks*

- Utilize the Net-Zero Design Guide to educate the benefits of a reflective roof
- Partner with CVTC, homebuilders, and home improvement stores to educate and market the benefits of reflective roofs.
- Pass an ordinance that requires commercial roofs be reflective.

## Renewable Energy and Strategic Electrification

**Increase integration of battery storage for commercial buildings, especially in conjunction with on-site solar PV**

Battery storage is quickly gaining popularity and hold promise to reduce peak load and reduce emissions for buildings. However, this technology has not yet proven to be cost effective for larger buildings, and is not widely adopted. To help break down barriers to adoption of this technology, work to create relatable pilot projects.

*Building Blocks*

[29] https://www.energy.gov/energysaver/design/energy-efficient-home-design/cool-roofs

- Work with local institutions to create a pilot project of battery storage paired with solar on a small and relatable scale (such as ice fishing houses)
- Identify smaller commercial sites to test battery storage technologies

**Increase adoption of air- and ground-source heating and cooling technologies including geothermal systems for commercial buildings and campuses**

Ground- and air-source heating technologies are an efficient way to use renewable energy to power building heating and cooling. Advanced planning can help identify opportunities for new commercial development to consider the benefits and feasibility of this option.

*Building Blocks*

- Assess building types and locations within the city of Eau Claire that would be suited for ground source heating and cooling.
- Assess feasibility and carbon impacts of a district heating and cooling system that is renewably powered.
- Work with local colleges and universities to build commercial-scale demonstration projects of strategic electrification technologies

# Transportation

**EcoBlock**

Scaling what is required for meeting the 2050 goals will be a challenge, especially in existing parts of the city. New Development schemes are needed. One example is the Ecoblock pilot which takes an integrated systems design approach with land use, transportation, energy, water and waste.

*Building Blocks*

- Research promising urban planning schemes such as the pilot concept EcoBlock
- Work with partners to understand what systems could be adapted or transformed economically
- Alter development codes after 2030 to address gaps in achieving 2050 goals.

**Explore and implement opportunities for bus rapid transit along high-frequency routes**

Express or Bus Rapid Transit (BRT) services may provide faster times to attract ridership. BRT often provide a fixed guideway route with stations, however this option may prove more costly without a master development plan.

*Building Blocks*

- Invest opportunities in Transit Development Plans
- Use the Comprehensive Plan's Land Use and Growth Management Plan to determine routes and to support news area of growth and densification.
- Seek federal grants to study and possibly to implement BRT.

**Support Passenger Rail**

The West Central Wisconsin Rail Coalition (WCWRC) has been promoting passenger high speed and commuter rail alternatives since the late 1990s. The current proposal is for a public-private operation between Eau Claire and the Twin Cities.

*Building Blocks*

- Work with and support partners such as WCWRC for intercity connections, regionally and long-distance operations
- Continue to advocate for remaining in Wisconsin and Minnesota state rail plans
- Advocate for legislation such as regional transit authorities
- Perform required environmental and engineering studies
- Pursue funding if there are findings of no significant impact

# Waste

**Develop a "pay as you throw" program to incentivize waste reduction by increased recycling and waste reduction.**

Pay-as-you-throw (PAYT) programs, also known as unit pricing or variable-rate pricing, charge residents for the collection of solid waste based on the amount that they throw away. A major difference between the current system is that PAYT is not paid by property taxes or fixed fees but rather by a variable rate in a similar manner to services such as electricity and other utilities. The challenge with switching to a PAYT system is that there is already a very convenient system in place that the public is comfortable using.

*Building Blocks*

- Create a neighborhood pilot program for PAYT and explore potential grant funding to launch such a program.
- Develop policies and ordinances which require all trash haulers to adopt the same system of collecting separated waste
- Explore the needed safety net to make the private companies comfortable with adopting and transitioning to a PAYT system.
- Explore the need for public dollars to make up the difference between lower revenue from reduction of trash.

**Explore the feasibility of a local Materials Recovery Facility (MRF)**

An MRF may represent feasibility challenges because there is no current natural economic incentive to build and maintain such a facility. A major obstacle to the economic viability of an MRF is the development of end markets for the recycled material. A MRF may be a piece of the puzzle that is required to develop a circular economic model. Others have found moving to a circular economy may provide long-term economic, social, and environmental benefits. This transition may generate jobs,

increase the robustness of the economy, increase the accessibility of goods, maximize the value of resources, and reduce waste. [30]

*Building Blocks*

- Explore "take back" policies which would require local companies to by a certain amount of recycled materials.
- Develop a campaign to address upstream production by working with companies to develop product design which supports a circular economy.

[30] https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/response-to-china-national-sword/circular-economy-policy